

It's Important to Know In Time'

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The Newspaper of the Industry

Air Conditioning & REFRIGERATION

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Inside Dope

By George F. Taubeneck

Army Can't Get Enough Refrigeration Men But They're Training 'Em—and Well!

Inspiring Officers Bank for the Future War Timetable Sub Menace Smith & Mitchell, Take Bows! This War's Different

Army Can't Get Enough Refrigeration Men

Lt. Col. B. Jacobowitz, Director of Personnel, Office of the Quartermaster General, tells us that the Army simply can't get enough trained refrigeration engineers and repair men.

"Calls come from everywhere for men who understand refrigeration," he says. "Medical Corps. wants them; so do the Air Forces, and the Quartermaster General could use them in droves. The demand seemed to build up all of a sudden."

In company with Lt. Col. R. W. Mayer, Director of Training, Office of Quartermaster General (Washington), and Col. W. H. McCarty, Director of Training, Sixth Service Command (Chicago), Lt. Col. Jacobowitz was inspecting the school at Bloomington, Illinois, where army refrigeration maintenance engineers are now trained, and he made the statement.

But They're Training 'Em—and Well!

The writer made a flying trip down there coincidentally with these Army dignitaries, to address the first graduating class of refrigeration technicians. Approximately 100 were in the class, with 300 more in training. Classes will be brought in, trained for three months, and sent out all over the world for army duty.

This school, only one in the country training refrigeration service men for the Army, is known as the Commercial Trades Institute. R. E. Tucker is president, R. C. Anderson is manager, and R. L. Hendrickson is chief instructor. They are able men and good educators.

Around them they have drawn a staff of experienced service men (a manufacturer's field man in that territory complained bitterly to me that they had drained off all the best service men in those parts), and they are giving those Army lads a thorough grounding in the installation, maintenance and repair of every type of refrigeration system.

Training quarters are in a big concrete structure formerly used as a garage. The men are housed in hotels and in a building previously considered a theater. No other military camps being near, the people of Bloomington really take these boys into their hearts. The boys say they've seen nothing like this hospitality anywhere else they've been, and they love it.

Inspiring Officers

Our opinion of the Army went up another notch upon getting better acquainted with Colonels McCarty, Mayer, and Jacobowitz. All spoke inspiringly, all were the type under whom any man would be proud to serve.

Col. McCarty handed out the diplomas, and with each he gave an electrifying handclasp and a democratic sort of grin that had those graduating soldiers doing ground loops.

You'd see the lad walk up diffidently, shyly, or cockily as the case

(Concluded on Page 33, Column 4)

New Sources of Manpower For Refrigeration Service

If this nation doesn't suffer calamitous breakdowns of its refrigeration facilities this summer, it will be somewhat of a miracle. And, if food supplies are going to get shorter and shorter, those breakdowns will be tragic. The people will yell to high heaven.

This industry cannot sit back and let these breakdowns occur, contenting itself with blaming "Washington." True, it would be swell if somebody in WPB would permit the building of adequate stockpiles of household refrigeration repair parts. True again, it would be just dandy if the Navy and the USES would quit proselyting service men.

BUT, excuses won't satisfy your old customers this summer when their refrigeration systems stop running and you can't get around to fix them for two or three weeks. We've got to do the best we can with what we have. What we have at present, unfortunately, isn't enough to do the job.

Here are two sources of manpower you can go after, if you are willing to train them yourselves:

(1) *Army men over 38.* These are being released or "furloughed" to essential industries, and refrigeration service is so classified. Local draft boards can help you here, particularly in smaller communities. Also, you may know of some friend or neighbor for whose release you could apply.

(2) *High School boys under 17.* Go to a high school principal and get his help in enlisting bright boys with mechanical aptitude. If you start training them right away (at night, after school), they should be of considerable help to you during your summer rush. It is hoped the war will be over before they would be drafted. Refrigeration training fits right in with high school studies in physics and chemistry, and most educators should approve highly of this supplemental practical training. Refrigeration is also a trade these boys can follow after the war, and they can enter into the training with real enthusiasm. Incidentally, you will be surprised at the mechanical ability of this "younger generation."

By going right after these two new sources of manpower to replace service men you have lost, you may help perform that miracle. If so, it will forever redound to your credit, and to the credit of the industry. Failure may give all of us a black eye we surely don't deserve, but which the public would probably hand us, anyway.

P. S.: On the editorial page of this issue appears a letter on this subject from E. E. Pauly, veteran and respected Frigidaire dealer in Sheboygan, Mich. He suggests that automobile mechanics be trained to service refrigeration systems. This is a fine idea for those communities where automotive service men have idle time. He also suggests that the NEWS prepare a correspondence course in refrigeration for such training. We have one already, Mr. Pauly, in our Master Service Manuals, which sell for a dollar apiece. Demand for these is already so great that we'll soon have to ask WPB to grant an exception to the paper limitation order so that we can fill the demand and the need.

—THE EDITOR

S.R.C.A. Membership Extended to 3 Firms

PITTSBURGH—Standard Refrigeration Compressor Association has recently extended membership to Copeland Refrigeration Corp., Universal Cooler Corp., and York Ice Machinery Corp., it was reported last week by E. A. Terhune, chairman.

It was also stated that the next meeting of the SRCA will probably be held June 23 or 24.

Inventory Control Covers Released Refrigerators

NEW YORK CITY—Denial by WPB of a request that new mechanical refrigerators, recently released for sale to the public, be exempt from inventory control, was reported in trade circles here April 5.

Granting of the request would have permitted some stores, frozen under Inventory Limitation Order L-219, to sell the refrigerators without affecting limited open-to-buy standing.

However, WPB says that consideration will be given an individual appeal if the case warrants relief.

Alco Valve Co. In New 3-Story Plant

ST. LOUIS—Alco Valve Co., designers and manufacturers of automatic control devices used in refrigeration and air conditioning industries, moved this month into a new three-story plant at 865 Kingsland.

The new plant, which doubles their floor space and affords full daylight throughout the factory, is equipped with completely modern laboratories for research in the fields of refrigeration, air conditioning, hydraulics, and related electrical influence.

One feature of the refrigeration laboratory is an insulated "hot" room which can maintain temperatures up to 120° F. for use in testing units as display or frozen food cabinets.

Testing of aircraft accessories will be carried on under conditions simulating flight at high altitudes in the altitude chamber of the hydraulic laboratory.

Outside the building, for the enjoyment of employees, a one-acre park has been landscaped and provided with benches, fountains, and pathways.

OCS Report Omits Refrigeration - But It Was Oversight

WESTERN UNION

WA335 84 Govt NL—Washington DC 9 1943 APR 9 PM 10 16 George F Taubeneck, Business News Publishing Co. 5229 Cass Ave. Detroit

Press release enumerated essential hard goods list as compiled by special civilian supply committee made up prominent business men conversant with field. These items are those available to consumers in hardware stores and departments. Office of Civilian Supply does and always has considered parts for repair and maintenance of refrigerators of great importance to civilian economy. No order exists limiting or prohibiting the manufacture of these repair and maintenance parts. We continue to encourage you to help us urge industry to produce adequate supplies.

Henry A. Dinegar, Chief, Consumer Durables Branch, Office of Civilian Supply, War Production Board.

WASHINGTON, D. C.—When an advisory panel of four business executives (in the hardware, department store, mail order, and farm equipment fields) made up a list of 200 items "which may prove to be necessary for essential civilian use," and submitted it to the WPB Office of Civilian Supply, they somehow forgot about refrigeration.

Only item on the list in the refrigeration category is ice picks.

However, spokesmen for the Office of Civilian Supply assure the NEWS, this is only "a" list and not "the" list; and furthermore, the Office of Civilian Supply continues to maintain its position that refrigeration is an essential civilian service.

Elsewhere in this issue Joseph L. Weiner, Director of the Office of Civilian Supply, is quoted to that effect in testimony before a Senate committee. Also see telegram on this page from Henry A. Dinegar, chief of the Consumer Durables Branch of the Office of Civilian Supply, under whose auspices this report was issued.

The OCS statement on the study of this special "hard goods" committee follows:

In line with the policy that the civilian economy must be sound as well as lean, the Office of Civilian Supply is now studying a report—prepared at its request by a special "hard goods" committee of four business men—dealing with some 200 items and classes of items which may prove to be necessary for essential civilian use.

Most of the items on the list are things which are still being produced, and the continued production of which, the Office of Civilian Supply feels, should be protected.

Eight of the items are things which at the moment are not being produced.

(Concluded on Page 33, Column 1)

Industry Finds Both Good and Bad in L-38

Clarification Is Believed Necessary on Provisions That Concern Parts

DETROIT.—With the amended Order L-38 only two weeks old, the commercial refrigeration and air conditioning industry is busily engaged in trying to assimilate the detailed provisions of the order, and then deciding what's good and what's bad about it—from the standpoint of those in the field.

These are "apparently" some of the good things, as the industry sees it.

(1) It is very specific on many of the points that formerly were vaguely covered and capable of a loose interpretation.

(2) "Unrestricted delivery" is permitted on items which for little reason had previously required a priority application.

(3) Provision that permits manufacturers of replacement parts to schedule production of such parts as if the orders bore a rating of AA-1 is a major victory.

(4) Fabrication of certain types of equipment is permitted where parts or materials are on hand.

(5) List "C" Essential Uses, should give the dealer-contractor in the field a pretty clear picture of the type of installation on which he would be reasonably sure of getting priority assistance.

Some of the principal "objecting" (Concluded on Page 2, Column 3)

Order P-100 No Longer In Effect

WASHINGTON, D. C.—Preference rating order P-100, repairs, maintenance, and operating supplies, has been revoked as of April 2.

(P-100 will be remembered as the original order under which refrigeration repair parts could be obtained on priority.)

There is one exception, "any serial numbered copy of said order issued to a producer located in the Dominion of Canada shall remain in effect until either the order is specifically revoked, or such producer becomes eligible to apply the ratings assigned by CMP Regulation No. 5."

Firm Is Penalized For Violating L-38

WASHINGTON, D. C.—F. H. Kaup, who operates the refrigeration engineering Co., Minneapolis, has been penalized by the War Production Board for unauthorized sale of refrigerating equipment, it was announced April 1.

The record of the case indicates that Kaup sold a considerable quantity of this equipment on purchase orders, which were not rated or classed as "preferred orders," to persons not entitled to receive these supplies under the provisions of General Limitation Order L-38.

By the terms of suspension order S-264, Kaup is not permitted to handle any refrigerating or air conditioning equipment for the next three months without written authorization by the WPB Chicago regional office.

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Both Praise and Criticism Given Amended L-38

(Concluded from Page 1, Column 5)
to the order seems to center on two points:

(1) No provision is made, as the order stands, for the production of equipment that might be needed for common civilian needs of refrigeration equipment for food stores, etc., in the event that circumstances should create an expanding demand. List "D" Items Which May Not Be Produced for Any Purpose knocks out some items which conceivably might be quite necessary.

(2) The "language" of the order is such that it might possibly be interpreted to hinder the rendering of emergency service repairs, as provided for under Order P-126.

One commentary on the tightened production restrictions in the order declares:

"No provision whatever is made for taking care of a possible essential need for new refrigerated equipment. The food picture changes all of the time, and certainly a lot of the present equipment is wearing out to the point where it soon will be no longer capable of preserving perishable foods without the dangers of spoilage and contamination.

"The Washington officials would probably answer this by saying that there is nothing to prevent the manufacturers from making commercial refrigerators out of wood, as prescribed in L-126, said wood or lumber to be acquired from 'excess inven-

ALCO

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Above the Earth*



York-Boeing Strato-Chamber—Photo Courtesy York Ice Machinery Corp.

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Such a specialized application of Alco Valves is but one example of the part Alco engineering, design, and performance is contributing to the advancement of our War Effort. The wide experience we are gaining today means *even finer* Alco products for civilian uses after Peace has been achieved.

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Engineered Refrigerant Controls

THE STANDARD OF THE INDUSTRY

Program of Meetings at the Wartime Refrigeration Industry Conference

Palmer House, Chicago, April 12, 13, 14

OVERALL SCHEDULE OF MEETINGS AT THE CONFERENCE

MONDAY, APRIL 12

10:00 a.m.—R.E.M.A. Board of Directors—Meeting and Luncheon—Rooms No. 3 and 4.

TUESDAY, APRIL 13

9:30 a.m.—Eighth Annual Meeting of the National Refrigeration Supply Jobbers Association, Room No. 18.

Scheduled Addresses: "Obtaining Material on PD-IX Applications," Sterling A. Warren, Industrial & Hardware Supplies Branch, WPB.

10:00 a.m.—R.E.M.A.'s Manufacturers' Meeting, Room No. 17.

Scheduled Addresses: "How the Refrigeration and Air Conditioning Industry Advisory Committee Works," A. B. Schellenberg, "A Product Group Task Committee Goes Into Action," C. M. Cordley, "WPB Orders Affecting Refrigeration and Air Conditioning Industry," Sterling F. Smith, Chief, Refrigeration and Air Conditioning Section, WPB, "The Plans of the National Refrigeration War Council," John Wylie, Jr.

12:30 p.m.—Jobbers' Luncheon, Room No. 14.

2:00 p.m.—Afternoon Session of National Refrigeration Supply Jobbers Association, Room No. 18.

Scheduled Addresses: "WPB Orders Affecting Refrigeration Supply Jobbers," Sterling F. Smith, WPB, "The Operation of the Controlled Materials Plan as it Affects the Refrigeration Jobber," J. W. Krall, Detroit Lubricator Co., "A Glance at Postwar Conditions," Harry Alter, The Harry Alter Co.; C. E. Borden, A. E. Borden Co.

2:30 p.m.—R.E.M.A. Product Group Closed Meetings.

Location of Product Group Meetings: Heat Transfer Equipment, Room 1; High Side Equipment, Room 2; Temperature Controls, Room 3; Flow Control Valves, Room 788; Valves, Fittings, Accessories, Room 789; Water and Beverage Coolers, Room 790; Motors and Transmission Equipment, Room 791; Refrigerants, Lubricating Oils, and Chemicals, Room 792; Tubing, Piping, and Sweat Fittings and Service Tools, Instruments and Materials, Room 793.

7:00 p.m.—Jobbers' Dinner, Room No. 15.

WEDNESDAY, APRIL 14

10:00 a.m.—Joint Meeting of Refrigeration Equipment Manufacturers Association, National Refrigeration Supply Jobbers Association, and Refrigeration Service Engineers Society, Red Lacquer Room.

Schedule for Joint Meeting: Reports from Products Group Meetings of Rema, Open Forum and Discussion. "The Coming Crisis in Refrigeration Service," Paul B. Reed.

12:30 p.m.—Joint Luncheon, Room No. 14.

2:00 p.m.—N.R.S.J.A. Board of Directors—Meeting—Room No. 7.

2 to 5 p.m.—Open for Conferences Between Manufacturers and Jobbers.

ories' in the hands of manufacturers who have been converted to war production. If any one can turn up one of these lumber piles, he will be in line for a handsome reward, because lumber happens to be an item that, in some respects, is even more critical than steel.

"It seems to me that the order fails to make adequate provision to take care of essential food preservation needs of our civilian economy which, after all, was what the program was originally designed to accomplish."

In response to a request from the NEWS, Harry Alter, president of The Harry Alter Co., had the following comment to make anent L-38 as it affects repair parts:

By HARRY ALTER

Order L-38 as amended March 27, 1943, would seem to nullify many of the provisions of Preference Rating Order P-126. Is that the intent? I don't believe so. But certainly there is a wide gap in the language of L-38 and what I believe to be its intent. Let us discuss this new L-38 only as regards its provisions pertaining to "(b) RESTRICTIONS ON DELIVERIES, (1) Parts for repair service."

Starting with three important definitions we find first that the "emergency service agency" of P-126 is defined in L-38 as a "dealer." Secondly, we find that L-38 defines "parts" as all-inclusive whether made of critical materials or not, thus oils, refrigerants, and other non-critical items are "parts" that are subject to the same restrictions. And thirdly, "deliver" as defined includes the word "install," as well as other forms of transfer of ownership.

With those definitions in mind let us now read the paragraph of L-38 having to do with "restrictions on deliveries of parts for repair services" (b) (1) (i).

It says that no "dealer" (includes emergency service agency) or producer shall deliver (includes install) any new or used parts (includes even a change of refrigerant) to the owner, lessee or user of any used system, and no person shall accept delivery of any such parts, unless such parts are delivered either (a) for use in "emergency repair service" and (note it does not say "or") to fill a purchase order bearing a preference rating of AA-4 or higher . . . let us stop here and analyze this sentence so far.

Literally paraphrased this means, to me, no emergency service agency shall sell or install any new or used part, belt, refrigerant charge, oil charge, to a commercial system unless it is an emergency and also un-

less he receives a purchase order rated AA-4 or higher.

For example, I think this paragraph taken literally means that a meat dealer with a ton of meat in his cooler could not get this cooler repaired unless he could issue a purchase order of AA-4 or higher to his refrigeration service company and certainly he has no authority to extend such a rating. So under L-38 he files a PD-831 application with WPB and gets his cooler repaired after a week or so, meantime losing his ton of meat and being out of business in the interim besides.

Surely I cannot believe that that is the intention of L-38 nor the WPB but that is what it says. This is a glaring example of what I mean by the gap between the language and the intent of this order.

What then is the intent of L-38? I think the intent is to allow the "emergency service agency" to initiate the AA-4 rating for parts needed for repair as prescribed in P-126. I fail to understand why L-38 is not clear on this point but let us in the industry hope that early clarification will be forthcoming from WPB.

The remainder of this paragraph seems to be clear and easily understandable.

Now we get to the next paragraph (b) (1) (ii) having to do with "comfort cooling systems." There is only one point that comes to mind that seems queer. A limit of \$25.00 is placed on parts for a system of 20-hp. or less, again providing a rating of AA-4 is available. But a 20-hp. system could easily require more than \$25.000 worth of "Freon" to replace a charge that had leaked out. I suppose in that case the "emergency service agency" assuming he was authorized to do so, would recharge the system with only 25 lbs. of "Freon" and stop even if 35 lbs. were required for satisfactory operation.

I don't suppose any man can write as complete an order as L-38 without having a lot of men like me finding flaws in it after it is published. But I feel that the sooner these flaws are found and pointed out the sooner they will be corrected. So my object in writing this is in the hope that it will be constructive and that the doubtful points mentioned will be cleared up.

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FEWER SHOPPING TRIPS!
WHAT GOES WHERE?
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Another authoritative

FRIGIDAIRE

message to help refrigerator users
solve a new food storage problem

Answering another wartime problem

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here tells you

HOW TO KEEP MEAT

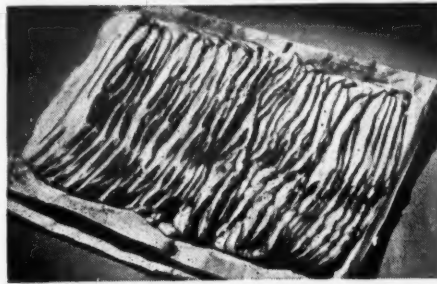
Fighting men come first, so there's less meat at home. Less meat—but more storage problems! If you buy a week's allotment at one time, instead of making daily purchases, or if you buy meats you have never used before, you want to know: How long will meat keep? What kinds keep best? Should meat be frozen at home? These answers will help the users of the more than 7 million Frigidaires sold...and every other refrigerator user!



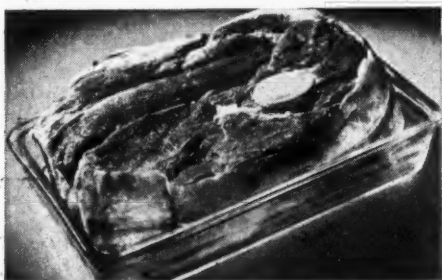
Buy War Bonds for Victory



Leftover cooked meats should be stored in a covered dish to prevent drying. Generally, leftover meat should be handled as little as possible. Do not cut or grind until just before using.



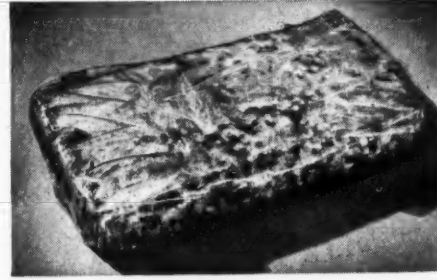
Smoked meats, if mildly cured, require refrigeration but will keep up to two weeks. To prevent mold, wrap in cloth wrung out of vinegar; then wrap again in waxed paper.



Steaks, chops and roasts keep best of all meats. May be kept up to three days just below the freezing unit. When buying roasts for later use, choose them well-covered with fat.



Ground meat should be cooked within twenty-four hours after purchase, or frozen when you get home. Before freezing, form it into cooking portions. Avoid unnecessary handling.



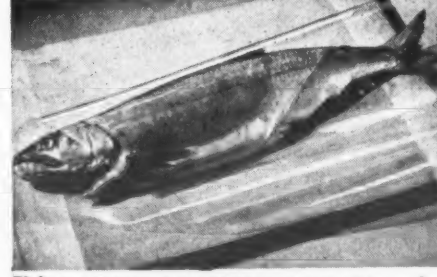
Frozen meats will keep indefinitely if kept frozen in freezing unit. After thawing, frozen meat is more perishable than other meat. Caution: Never refreeze, after meat is once thawed.



Poultry, unlike meat, should be cleaned and washed before refrigeration. Whole birds keep better than disjointed birds. Cut up birds just before using. Freeze chicken like meats.



Variety meats, such as liver, kidneys, hearts, sweetbreads and brains keep best when frozen. Freeze them as soon as you get home or cook them within twenty-four hours after purchase.



Fish should be cooked within twenty-four hours after purchase. If it is to be kept longer freeze it immediately. To freeze fish and meats at home, follow directions at left below.

HOW TO FREEZE MEATS

Wrap meat in waxed paper and place in ice tray. (Separate individual portions with waxed paper to prevent freezing together). To freeze quickly, place tray on bottom shelf of freezer and turn control to fastest freezing point. For continued storage after freezing, reset control to a colder than normal position. Keep meat in freezer until time to use it. Never refreeze meat after thawing.

GENERAL RULES

Never wash meat or wipe with damp cloth until just before cooking. After purchase, remove meat from market paper. If not to be frozen, store in meat compartment or defrosting tray. Cover lightly with waxed paper. Leave ends open. Fresh meat requires free air circulation. Do not cut or chop meat until just before using. Both fresh and cooked left-over meats spoil quickly when cut or chopped.



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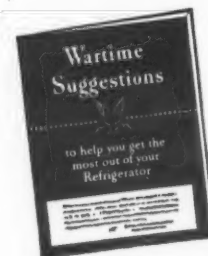
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WARTIME SUGGESTIONS—36 pages of helpful, practical ideas. This meat information is typical. Get your free copy from any Frigidaire dealer. Look for his Frigidaire store sign, or find name in your classified directory under REFRIGERATORS. Or address Frigidaire Division, General Motors Corp., 354 Taylor Street, Dayton, Ohio.



Next month: "How to Make Room in a Crowded Refrigerator"

Dealers offer FREE booklet



Every message urges readers to call on the Frigidaire dealer for a free copy of WARTIME SUGGESTIONS, Frigidaire's new 36-page booklet that answers dozens of food and refrigeration

problems. They are told to look for his Frigidaire sign or find his name under a factory paid heading in the telephone directory.

New showroom help

In addition, every Frigidaire dealer has been supplied with attractive display material, free of charge. This material merchandises the WARTIME SUGGESTIONS Booklet and the national magazine message.



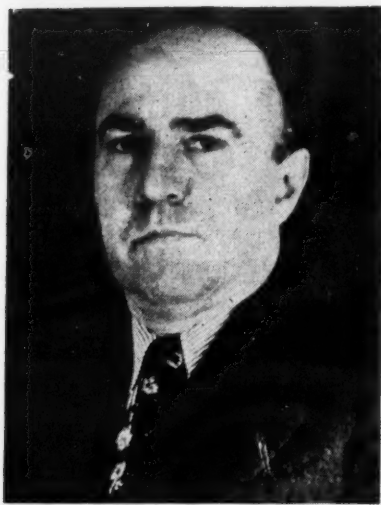
WATCH for this genuinely helpful message. It will appear in 2 colors during April and May in Life, Woman's Home Companion, Ladies' Home Journal, McCall's, Good Housekeep-

ing, Better Homes & Gardens, American Home, True Story, and Farm Journal & Farmer's Wife, with a combined circulation of more than 27 million!



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Now Sales Manager

E. J. DOUCET
...

Doucet Is Appointed General Sales Manager By Detroit Lubricator

DETROIT—E. J. Doucet has been appointed general sales manager of the Detroit Lubricator Co.

Doucet has been associated with the company for 26 years and at the time of the appointment was serving as sales assistant to the Detroit Lubricator president.

Until two years ago when he was transferred to Detroit, Doucet was in charge of oil burner equipment sales for the western territory with headquarters in Chicago.

First Official Interpretations of Order L-38 Covering Commercial Refrigeration and Air Conditioning Systems

WASHINGTON, D. C.—The following series of questions and answers on Order L-38 (drinking water coolers, refrigerating, and air conditioning equipment), as amended March 27, 1943, was issued April 7 by the General Industrial Equipment Division:

1. A producer has List A items of equipment acquired prior to May 15, 1942, all of which are of the self-contained type (including condensing units acquired for use in such List A items).

(a) Can he deliver these items unrestricted to the ultimate consumer?

Answer: Yes.

(b) Can he deliver these items unrestricted to a dealer, and can the dealer in turn deliver them unrestricted to the ultimate consumer?

Answer: Yes.

(c) Does it make any difference in the answer to (a) and (b) above if the condensing units in self-contained equipment are larger than $\frac{1}{3}$ hp.?

Answer: No.

2. A dealer has List A items of equipment acquired prior to May 15, 1942, all of which are of the self-contained type.

(a) Can he deliver unrestricted to the ultimate consumer?

Answer: Yes.

3. A producer has List A items of equipment acquired prior to May 15, 1942, all of which use a remote type condensing unit $\frac{1}{3}$ hp. or less.

(a) Can he deliver the condensing units with the List A items if such condensing units were acquired by him

prior to May 15, 1942, for use with List A items owned by him on said date?

Answer: Yes.

(b) If he also has the tubing and other accessories acquired prior to May 15, 1942, can he deliver them unrestricted with the List A items and the condensing units?

Answer: Yes, if he acquired them prior to May 15, 1942, for use with the List A items.

(c) Can he deliver any repair parts unrestricted acquired by him prior to May 15, 1942, for the repair of List A items?

Answer: No. The delivery of repair and maintenance parts (for emergency repair service as defined in the order) is covered by paragraph (b) (1) of the order.

4. A dealer has List A items of equipment acquired prior to May 15, 1942, all of which use a remote type condensing unit rated at $\frac{1}{3}$ hp. or less.

(a) Can he deliver the condensing units with the List A items if such condensing units were acquired by him prior to May 15, 1942, for use with List A items owned by him on said date?

Answer: Yes.

(b) If he also had the tubing and other accessories acquired prior to May 15, 1942, could he deliver them unrestricted with the List A items and the condensing units?

Answer: Yes, if he acquired them prior to May 15, 1942 for use with the List A items.

5. If a producer has List A items of equipment which he acquired prior to May 15, 1942, but does not have the condensing units for these items, can he:

(a) purchase condensing units from another producer and then sell the completed List A items unrestricted to either a dealer or to an ultimate consumer?

Answer: No.

(b) sell the List A items of equipment (less the condensing units) unrestricted to a dealer?

Answer: Yes.

(c) Can the dealer in (b) above deliver a completed List A item unrestricted if said dealer has the condensing units?

Answer: No, because obviously such dealer did not acquire the condensing units for use with these List A items.

Note: In (c) above the same answer applies to tubing and installation material.

6. A producer has List A items of equipment which are not self-contained, the condensing units are larger than $\frac{1}{3}$ hp., and he has the condensing units in inventory which he acquired for use with these List A items.

(a) Can the producer build an enclosure for these units, attach them to the List A items, call them self-contained, and then sell the complete unit unrestricted?

Answer: No, because such items of equipment were obviously designed for use with a remote type condensing unit and were not designed as self-contained equipment.

7. A producer or dealer has List A items of equipment which he may sell unrestricted but the condensing units for these items are of the remote type and larger than $\frac{1}{3}$ hp.

(a) How can he deliver the condensing unit to the ultimate consumer?

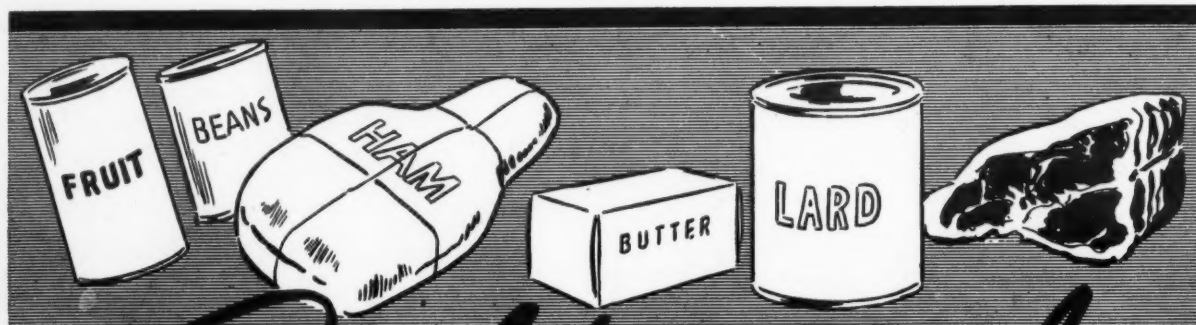
Answer: The consumer may apply on Form PD-831 for authorization to purchase the unit or he may purchase unrestricted a used condensing unit if less than 3 hp.

8. How may a producer of reach-ins and walk-ins acquire materials to assemble such equipment for delivery on an "authorized order" and for civilian use?

Answer: He may only acquire such materials from another producer of reach-ins or walk-ins who has such materials in his inventory on April 6, 1943.

9. After April 6, 1943, can a producer or dealer deliver to the ultimate consumer equipment which has previously been assigned a preference rating through the operation of Form PD-1A, PD-200, and similar instruments?

Answer: No. After April 6, 1943, no such deliveries may be made unless authorized on Form PD-830 or PD-831 or unless for the direct use by the Army, Navy, Maritime Commission, or the War Shipping Administration.



Rationed

---according to need!

Everybody today feels the pinch of rationing. MacArthur and Eisenhower could easily use 100% more planes and tanks but each realizes that he must share with the other in the interest of the grand strategy. Each must be "rationed" according to his immediate needs for the task assigned.

Commercial refrigeration has been "rationed" for many months and under the priorities system Servel's finished products have followed other goods to the fighting fronts and into the "Arsenals of Democracy" to help produce the planes, tanks, ships, and guns.

Servel condensing units have consistently led the field in coolant coolers, rivet coolers, metal treating, instrument testing, and other vital application ranging down to minus 100° F.

During this period, however, hundreds of Servel machines have also found their way into "preferred" civilian uses, and today Servel is still selling substantial quantities of condensing units for food processing and preservation, milk cooling, and allied uses.

If you have need for high quality condensing units falling inside the present priorities regulations, Servel may be able to serve you.

A note on your letterhead will bring a Servel field engineer to discuss your problems, without obligation.

SERVEL, INC. ELECTRIC REFRIGERATION AND
AIR CONDITIONING DIVISION
EVANSVILLE, INDIANA

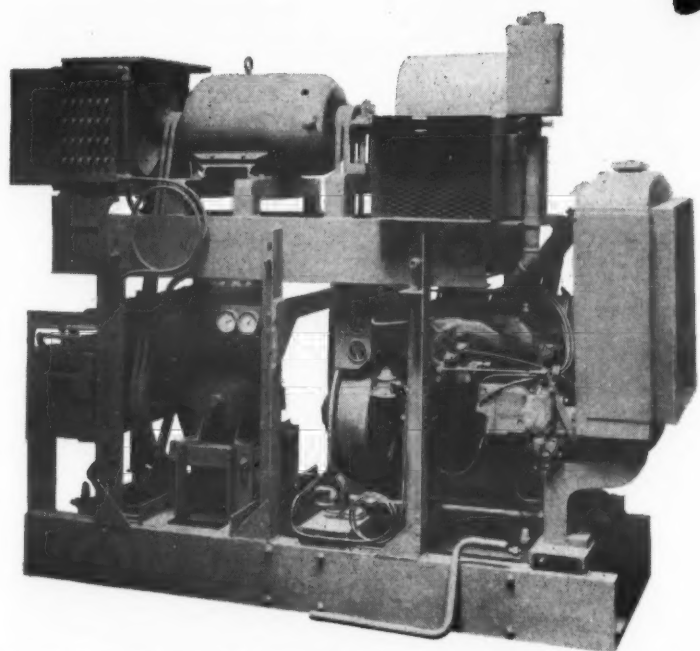
★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Sherer
REFRIGERATORS
IN THE SERVICE NOW!

Sherer equipment serves in army camps; in hospitals as blood banks; in preservation and conservation of foods everywhere. Sherer equipment is an important link in the Victory chain.

Write for franchise details now!
SHERER-GILLETT CO.
MARSHALL, MICHIGAN

LET'S ASK UNIVERSAL COOLER...



Specially-constructed 2-temperature
Universal Cooler Refrigerating Unit, typical of those
now serving with the United States Navy around the world.

... Refrigeration is our business

Whether it's 10° for frozen foods or 35° for perishable chow; whether in pre-fabricated cold storage warehouses, at permanent bases or aboard ship, Universal Cooler Refrigerating Units are providing sure protection for the fighting foods our sailors and marines must have. Specially-constructed refrigerating units for the Navy Bureau of Aeronautics, 2-temperature mobile units for the Marines and water-cooling units for ship and shore also are included in the "orders of the day" at Universal Cooler.

At present our 23 years of specialized experience are devoted primarily to advancing the efficiency and production of refrigerating units for America's armed forces. But we also have delegated special facilities to accomplish the same purpose for your part in John Q. Public's postwar Victory plans. These engineering-research facilities are at your disposal NOW.

UNIVERSAL COOLER

WE SELL TO MANUFACTURERS ONLY

UNIVERSAL COOLER CORPORATION • Automatic Refrigeration since 1922
MARION, OHIO • BRANTFORD, ONTARIO

What Dealers Are Doing About Merchandise Shortages

If Floor Coverings Are Your 'Substitute,' Here's How One Dealer Made Them Go

MILWAUKEE — If the appliance dealer intends to sell linoleum floor-coverings as a "sideline" in place of appliances, the most practical method of making it pay is to follow up former refrigerator customers, according to Hilgendorf Hardware Co. here.

Robert Yakes, head of the store, went into the linoleum field early in 1941, discovering that many new appliances were installed in kitchens with threadbare floorcoverings. From the first, Hilgendorf's has carried only one line of linoleum, a moderately-priced inlaid type, and has made no attempt to "fight competition" on a price basis.

"We sell one good grade, use salesmanship and a knowledge of kitchen appearance to merchandise it, and keep up our volume on that basis," Yakes said.

When new appliances became unavailable, Yakes moved the linoleum display up in front—occupying the same space once devoted to new refrigerators. Here all colors of the one grade of linoleum for use on both

walls and floors are shown, grouped around a "sketch book" of typical kitchen installations. All linoleum sales are made only to private homeowners and to a few defense housing projects. The latter have been steadily profitable, and in some instances have included as many as 100 houses at a time.

"We get a few leads through our display," Yakes explained. "And more from contractors to whom we have sold appliances in the past. But for the most part we have been successful in following up and selling the housewife already using appliances sold by our store."

"We have one salesman who is an expert in estimating costs, laying linoleum, and matching patterns and colors for best effect. He has been given a complete list of all customers on our appliance list, and spends his time in following them up. In more than half of his calls, he finds that the kitchen linoleum is worn out while appliances and furniture is fairly new. He then attempts to steer the customer into brightening up

her kitchen with the right color combinations or styles of linoleum for that particular house."

Wall linoleum jobs amount to about one-quarter of this dealer's sales—most of them resulting from laying a floor job. In each case, concentrating on prospects who have already been appliance customers has paid good dividends.

"Our past customers trust our judgment, and are much more inclined to buy than a stranger," Yakes summed up. "Many years of dealing with the same people has given us a good background and a chance to sell a new product effectually because we back it up."

Birmingham Supply Firm Makes Picture Gallery Of Its Customers

BIRMINGHAM, Ala.—So many refrigeration mechanics were leaving for the armed services and defense plants that Mrs. Robert Gennett, wife of the manager of Refrigeration Supplies Distributors, of this city got an idea. She would take a picture of each mechanic left, so as to have a sort of photographic record. This she did as the "boys" came into the shop to buy needed parts.

Now on the wall of the shop is a photographic gallery of most all of the mechanics in the business in and around Birmingham. A few have gone since the photos were snapped and are in Africa, Brookley Field, or somewhere else, while others are still carrying on.

How a Distributor Selected Lines With Major Profit Possibilities

Soap That Is Packaged and Sold Like Sugar Is a 'Special'

MILWAUKEE — Roth Appliance Distributors, Inc. here is helping its dealers in the Wisconsin-Upper Michigan area to keep going in the face of limited appliance merchandise by stressing sales of small units of available substitute products selected with extreme care for profit possibilities.

Thorough service on appliances already sold to customers is also an important part of Roth's war policy being used now by company dealers.

To get their ideas across, Roth Distributors recently held a series of four meetings in central Wisconsin and Upper Michigan cities. More than 200 retailers from surrounding areas attended.

There, W. H. Roth, president of the firm, summed up the war sales program by asserting "... additional worthwhile profits can be enjoyed by the dealer who sincerely puts forth efforts on small unit sales where the repeat orders are more or less automatic and ... a careful selection of a few small unit sales items with good turnover possibilities could represent the difference of staying in business or closing shop."

Mr. Roth explains how his own firm, operating on this belief, has investigated more than 200 merchandise items which seemed suitable for distribution to dealers, and has consistently passed up those which it decided would be unprofitable to them.

Of all products investigated, the ones finally accepted for Roth's substitute merchandise program include RAD granulated soap, developed and promoted in collaboration with a large soap manufacturer.

SOME OF STEMS HANDLED

"We are distributing with considerable success the Coolerator ice refrigerator, Mersman record cabinets, Sylvania lamp bulbs; also Stromberg-Carlson public address and inter-office communication system," Mr. Roth adds. "The latter," he explains, "to plants in the defense industries."

Concluding his list, the company president states that the firm has also enjoyed some plus business with the Walt Disney character plaks which were developed by the Youngstown Pressed Steel Co.

"Our special formula RAD soap has proven to be such an outstanding success that we are now, much to our regret, actually turning down requests from distributors and dealers whom we have not up to this time counted among our soap customers," Mr. Roth reveals. "This," he points out, "is because ... fats have been somewhat curtailed, and until the situation clarifies we believe it best to continue with the accounts to which we have already sold a total amount of RAD exceeding 300,000 pounds."

This soap product has been promoted here by department stores, a number of the larger Milwaukee appliance retailers, and in newspapers, and is now being distributed nationally. Minimum purchase is a 25 pound wooden bucket which retails at \$5.75.

"The rather singular success we have enjoyed with RAD can be attributed to principally two reasons," says Mr. Roth. "First, and most important—the quality is so superior to the average run of soaps that word of mouth advertising and repeat sales become automatic," he explains, "tying RAD sales in which the company's substitute merchandise selection policy."

25 POUNDS OF SOAP!

"Second," he continues, "our 25 pound minimum package, although difficult to introduce, has an appeal to both the dealer and consumer which cannot be denied. The consumer likes it because he does not have to make frequent trips to the store for soap—the dealer likes it because it has greatly enhanced his unit of soap sale."

It is further explained that Roth dealers can be supplied with 125 pound drums and 200 pound barrels from which they can package RAD as grocers do sugar and sell it at a profit margin.

The progress which Roth distributors have made with RAD granulated soap was used at the recent

dealers meetings as a point to prove how substitute merchandise can be profitable if it is selected intelligently.

Dealers' responsibilities to their customers in servicing appliances already sold was outlined for retailers present by Mr. Roth and E. S. Larkin, sales manager. Dealers who had lost their service men were invited to send to Roth's service department any appliance which could not be handled through their own facilities.

Furniture Makers Not Too Hopeful on 1943 Production

NEW YORK CITY — Furniture manufacturers expect their output to fall 50% or more below last year's record presently in spite of forecasts of some let-up on restricted civilian commodities.

Belief that 75% of civilian furniture production would be resumed as war contracts were completed, furniture men report, is erroneous as there is not enough material or labor to dovetail into civilian operation.

Operation in a few of the larger factories, since the completion of war contracts, amounts to 50% of the 1942 rate and others, still filling war orders, anticipate a falling-off about May 1.

Shipments, until very recently, have not shown a marked decline in comparison to 1942, the industry reports. However, heavy inventory of fabricated parts processed before the shortage of lumber and labor set in, and which is not replaceable, is given as the reason for maintaining a steady level thus far.

Lumber becomes increasingly difficult to buy and glue and hardware supplies are low.

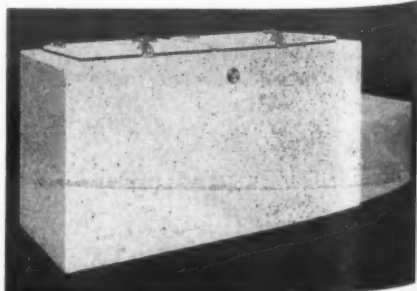
Continental FARM LOCKER PLANT

SAVES FOOD

Hardworking farmers make frequent trips to town for food! With the CONTINENTAL they can quickly FREEZE and keep in FROZEN STORAGE surplus fruits, vegetables, meat, poultry, and game—RIGHT IN THEIR OWN HOMES. This saves productive time. Often saves enough in food alone (now being wasted) to pay for the unit!

Illustrated — Model C-1243, with separate Freezing Compartment. Capacity, net, 11.5 cu. ft.—up to 575 lbs. of frozen food.

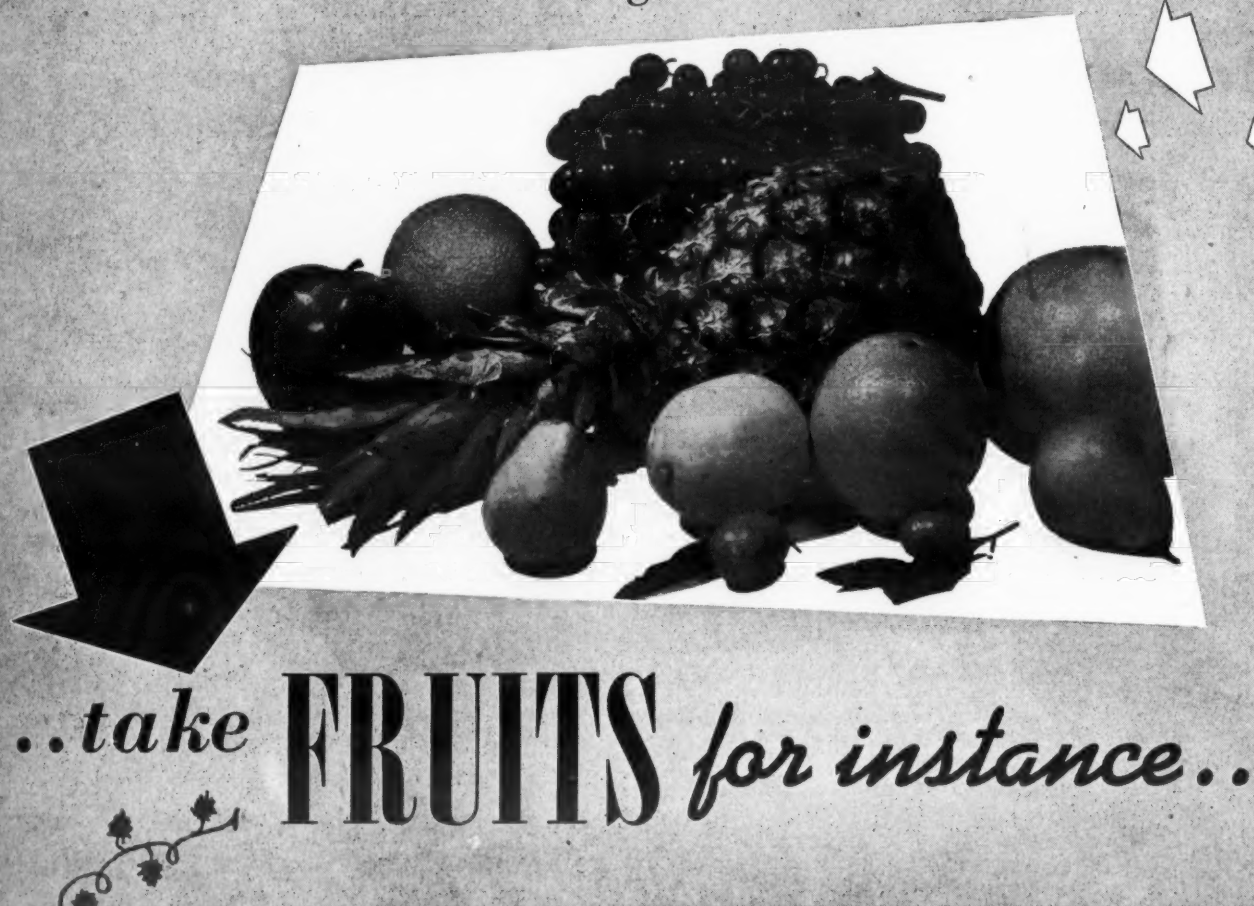
SANITARY REFRIGERATOR CO.
Fond du Lac, Wisconsin



★ ★ Buy
WAR BONDS
Now ★ ★

... and FARM LOCKER
PLANTS after the WAR

It's Time to Tell About Refrigeration's "Hidden Services"



THE Housewife today takes the tempting display of fresh fruits in her favorite market quite for granted. But behind every shipment of fruit at that market is an endless chain of Refrigeration that staggers the imagination. Hundreds of great refrigerated warehouses, receiving stations close to the orchards, carefully air conditioned storage plants at distribution centers, thousands of smaller plants at wholesale and retail markets—all are today working round the clock to assure plenty of fresh fruit in the American home. It's a responsibility more important now than ever before in compensating for rationed canned fruits.

DEPENDABLE REFRIGERANT VALVES help maintain the burden of this hard-working mechanical refrigeration in every type of application, large or small, from orchard to home refrigerator. Their accurate, supersensitive, **DEPENDABLE** operation is helping Service Engineers do a great job of keeping wartime Refrigeration up to peak efficiency with a minimum of service and expense.



Model 204



Model 205



Model 215

AUTOMATIC PRODUCTS COMPANY
2450 NORTH THIRTY — SECOND STREET
MILWAUKEE WISCONSIN
Export Department
100 Varick Street . . New York City

AP **DEPENDABLE**
Refrigerant Valves

Another Example of Kelvinator's "Retail-Minded" Action in Wartime!



GOVERNMENT realization of the vital necessity of maintaining refrigeration equipment in the nation's homes has led to the setting up of ways and means of handling the various problems arising out of the current manpower shortage.

Recognizing an opportunity to render another "retail-minded" service to the dealers of the entire industry—Kelvinator has prepared a new 24-page authoritatively written book, "REFRIGERATION SERVICE MANPOWER PROBLEMS and Suggested Procedure for Meeting Them."

This booklet details and interprets government regulations on manpower. And, wherever possible,

it suggests the steps which experience has shown are most effective in solving this serious problem.

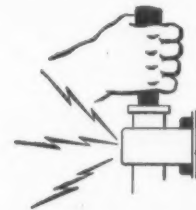
Published in a spirit of helpfulness, it is available to *all* refrigerator retailers, regardless of make handled. And, believing

that this is one of the most important services that can be rendered retailers today, we have already mailed copies to major appliance dealers from coast to coast.

If you have not received yours, or require additional copies, contact the nearest Kelvinator Distributor or Zone Office—or write: Kelvinator Division, Nash-Kelvinator Corporation, Detroit, Michigan.

Some of the Many Subjects Covered in "REFRIGERATION SERVICE MANPOWER PROBLEMS"

Employee Deferment	Attitude of Manpower Commission
Transfers of Mechanics	5 Suggestions on Meeting Manpower Problems
The Selective Service System	What is an "Essential" Activity
U. S. Employment Service	Employees' Wage Increases
Men 38 and Over	Adjustments of Service Charges
What is a "Necessary" Man	Provisions for Bonus Payments



SCRAP IS POWER

Cooperate With Your Industry!
Salvage All Inoperative Parts
Containing Critical Materials...
Put Vitally-Needed Scrap Back
Into the Scrap TODAY!

Look Ahead With



KELVINATOR

DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT, MICHIGAN

'Layaway Plan' Has Spread To Industrial Equipment Field

NEW YORK CITY—That popularity of the "layaway" plan is on the upgrade is reflected in notices listing additional signers among which is RCA Victor division of Radio Corp. of America, looking forward to post-war purchases of theater equipment, and manufacturers of various kinds of equipment.

In spite of the "layaway" idea having been designed for the benefit of the consumer field, it seems to be making more progress in the industrial equipment field where prospective customers are fewer than in the consumer field and which is conducive to more satisfactory contracts. In the case of RCA, for instance, the theater exhibitor agrees to make regular payments up to 20% of the estimated purchase price of the equipment.

Consumer goods agreements, however, are covered with war bonds and, so far, the layaway system has not met with the approval of the Treasury department, but it is hoped the Treasury will become reconciled to the plan as there is every possibility that, with money tied up in bonds through a layaway plan, there will be a marked decrease in bond redemption, an existing condition that has been disturbing to the Treasury recently.

Several "layaway" schemes are being tried. The one sponsored by Hartford Electric Light Co. allows customers to start making payments now to dealers for post-war delivery of electrical appliances. Automobile

dealers, buying used cars, urge sellers to use the money as a down payment on a new car to be delivered after the war. All plans, while they vary in detail, have but one object—establishment of credit.

Air Control Important In Parachute Making

PROVIDENCE, R. I.—Accurate testing of important products for the armed forces is made possible at a plant of International Braid Corp. through the installation in their testing laboratory of air conditioning equipment.

International Braid is engaged in making webbings for parachute harnesses, bomb slings, bomb harnesses, parachute harness packs, machine gun webbing, parachute shroud lines and a variety of other war necessities.

The air conditioning system maintains constantly uniform conditions of temperature and humidity without which tests would not be accurate. Nylon particularly, which is used for parachute harness webbings is extremely sensitive to temperature and humidity changes and all tests must be made under standard conditions. In the case of cotton, rayon, linen and wool, the materials are affected by humidity and accuracy in testing is possible only in conditioned air.

The air conditioning equipment maintains temperature at 70° and relative humidity at 65°.

Will The '42 Model Come Back at War's Close?

Designer Claims Public Won't Accept '42 Model

NEW YORK CITY—A warning that the consuming public may not accept plans for post-war resumption of 1942 model production of refrigerators and other consumer durable goods was sounded by Leo H. Rich, an associate of Walter Dorwin Teague, industrial designer, in addressing a meeting here March 17 of the New York Society of Security Analysts.

"I have heard," he said, "that the present plan of some makers of automobiles, refrigerators, stoves and other consumer durable goods is to get into quick production of 1942 models and take immediate advantage of deferred demands. These manufacturers believe, in addition to this being expedient, it has a sound economic basis."

"But I don't believe the manufacturers can get away with this. They have educated the public to expect new models each year, and the fabricator of parts has learned so much during the war that he is ready to bring out improved versions of his particular part. Submission of better products and materials and the demand of the public who have been made aware of these new materials and products may force the hand of the assembler."

Pointing out that it would be necessary for many companies to make a survey of their normal peacetime lines, Rich saw the possibility of switching to other products.

Makers May 'Educate' Buyers To Expect Them

NEW YORK CITY—Mechanical refrigerator manufacturers, reports the "New York Times," feeling that consumers have been led to expect greatly improved and revolutionarily designed cabinets on the post-war market, will start soon a campaign to impress the public with the fact that the first models available when peace comes will be 1942 models—the last word in refrigeration when conversion to war production took place.

Magazine and newspaper articles, and even some advertising by other industries, have proclaimed the great advances possible in the use of plastics, aluminum and magnesium for consumer durable goods, explains the "Times" article, until manufacturers have become concerned over the expectations of the post-war buyer. They admit that such greatly improved products are possible, but not for years after the war's end; meanwhile the public must be educated so it won't be disappointed with the conventional styles of early post-war products.

Even though the latest advances in engineering and design could be applied to the first post-war models, the article calls attention to the time element in reconverting from war work to refrigerator production. Because all the tools for the 1942 models have been saved, the "Times" reports that reconversion would take from four to six months; but the retooling necessary to produce completely new models would probably take over a year.

The article also points out that comparatively few 1942 refrigerators are in the hands of the public. The statement is made that 3,800,000 1941 models were manufactured, but only several hundred thousand of the 1942 models, of which 400,000 are still unsold because of the WPB freeze order. For this reason, the 1942 models, which were "the finest produced in the industry's history," will still be new to the public when produced and sold after the war, the proponents of "sticking with" '42 models believe.

Proponents of the "layaway" plan for selling major appliances now for post-war delivery feel that the proposed educational campaign will be very beneficial to their plan, the article states. One of the objections to this scheme has been that the public is dubious of buying things sight unseen. But if customers can be sure that the 1942 models, samples of which they can see, will be the only ones available immediately after the war, they should be much more willing to buy under the layaway plan.

Motor Schedules Call For Critical Types Only

WASHINGTON, D. C.—Plans for the scheduling of purchase orders for electric motors and generators were discussed in detail at a recent meeting in Washington of the Electric Motor Industry Advisory Committee with the WPB and other government officials.

The committee considered a scheduling form which was submitted by WPB's General Industrial Equipment Division and recommended that only the most critical types of motors and generators be scheduled at the present time. The critical types mentioned include some DC motors and generators and a few types of AC motors.

The meeting devoted considerable time to a discussion of the revised Form PD-738 filed each month by manufacturers with WPB. A summary of the February returns on this Form was offered to the committee and it was suggested that the summary should be mailed to the industry.

A Task Committee reported on its study of WPB questionnaires and reports and asked that an effort be made to eliminate some of the less important ones. It pointed out that the industry now had to fill out numerous forms returnable to government agencies in Washington—a task which often placed an unnecessary burden on the industry's clerical force. The Task Committee was asked to continue its study and further report on the subject at the next meeting of the Industry Advisory Committee to be held in Washington on April 14.

'42 Models Would Keep Employment Up, Is View

NEW YORK CITY—Industry's sociological responsibilities require return to the manufacture of 1942 models in major consumer durable goods when the war ends, it was declared by speakers at a meeting here March 18 of the postwar planning group of the American Marketing Association.

Replying to a recently expressed view that the public might not accept 1942 models in the post-war period, one gas appliance executive said that a time lag sufficient to allow the automobile industry, for example, to introduce completely new models would be so long as to bring about a collapse in employment in the industry.

As to the contention that the development of new materials and new products by suppliers would virtually force their incorporation in post-war models, it was pointed out that this could be done without necessarily changing the basic overall design of an automobile or other product in the consumer durable goods field.

In view of the fact that discussion was highly informal at the meeting, with a large number of speakers limited to two minutes each, identification of the speakers was deemed inadvisable for publication.

Varying answers were given by members as to their opinions on when the war would end. Two picked April, 1944; one by July 4, 1944, and another by the fall of next year. Extremes ranged from June of this year to "some time in 1945." One view was that the war would be over "six months after we invade the Continent."

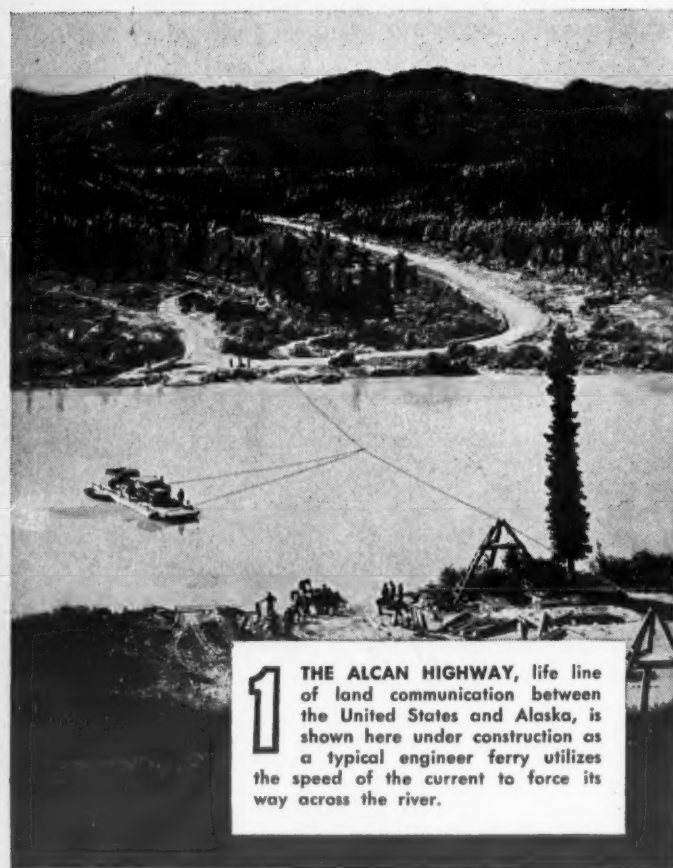
Although the opinion was almost unanimous that Germany would be defeated before Japan, the point was raised that once the Nazis have been conquered the civilian economy in this country will begin to be eased, even though the war with Japan continues for months afterward. Thus, it was stressed, there will be no abrupt ending to the war, such as accompanied the armistice in 1918, but a gradual decline in fighting on certain fronts.

Ask Auto Repairs Be Done In Order Of Their Essentiality

WASHINGTON, D. C.—Office of Defense Transportation has asked garages to give essential motor vehicle repairs priority over other repairs as a result of complaints from truckers who say that service on vital repairs is difficult to obtain because garages are too busy with more profitable work.

Rationing of facilities and mechanic's time was suggested by ODT to expedite the work and provide a better system of handling essential repairs.

FAMOUS LIFE LINES



1 THE ALCAN HIGHWAY, life line of land communication between the United States and Alaska, is shown here under construction as a typical engineer ferry utilizes the speed of the current to force its way across the river.



2 MECHANIZED CAVALRY'S STEEL HORSES, like these of the 107th Cavalry Regiment, as well as practically every other type of motorized military vehicle, have many of their "life lines"—fuel and lubrication lines, brake tubes, and other parts—of Bundy Tubing.

All Photos by U. S. Army Signal Corps

EVERY SECOND is a crisis when tanks clash in the desert or planes dive for the kill. There is no time for mistakes . . . no time for repairing faulty mechanisms.

Bundy Tubing fills an urgent role in providing vital lines for tanks, planes, PT boats, all types of fighting equipment.

Power boats, tandem rollers and Diesel engines depend on Bundy Tubing for fuel and lubrication lines. Hydraulic pressure is transmitted through Bundy Tubing for tank turrets and motor vehicles. Re-

frigerants for cooling ammunition and powder rooms pass through lines of Bundy Tubing. Structural or mechanical tubing is provided for radios, aircraft, gliders, tanks.

Wherever fuel and lubrication lines are needed, or where hydraulic pressure or refrigerants must be transmitted, Bundy Tubing is on the job.

We are proud that our product serves in so great a cause. We shall see to it that only the finest tubing Bundy can make goes into the equipment for our fighting forces. Bundy Tubing Company, Detroit.



U. S. ARMY SEARCHLIGHTS such as this more and more frequently have their "life lines"—lubrication lines for trailer and for power generating units—made from Bundy Tubing.

Buy U. S. War Bonds
Get in Your Scrap

BUNDY TUBING



BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including 12" O. D. This double-walled type is also available in steel, tin-coated on the outside, and in Monel.

BUNDY ELECTRICWELD steel tubing. Single-walled—butt welded—annealed. Available in sizes up to and including 24" O. D. Can be furnished tin-coated outside in smaller sizes.

BUNDY "TRIPLE-PURPOSE" tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel; all steel; Monel inside—steel outside; Monel outside—steel inside. Sizes up to and including 12" O. D.



**Cafeteria Models
Self-contained Storage
and
Remote Types**

**Shipboard and Land Use
FOR
Film Processing
Bakery Service
Drinking Water
Brine Cooling
War Industries
All Purposes**
Complying with Army and Navy
Specifications
Immediate Shipment

Filtrine
MANUFACTURING COMPANY
53 Lexington Ave., Brooklyn, N.Y.

Carl Nystrom with Tecumseh Products Engineering Staff

TECUMSEH, Mich.—Carl F. Nystrom's appointment to the engineering staff of Tecumseh Products Co. has been announced by the management. Until recently, he was with the engineering department at Westinghouse Electric Co.

Nystrom graduated from the Technische Schule at Falun, Sweden in 1905 and came to the U. S. the same year. In 1924 he started with Westinghouse and about 1928, with two other engineers, began the development of the Westinghouse refrigeration division.

At that time Westinghouse sent Nystrom to Mansfield, Ohio to take charge of compressor development, and then to Springfield, Mass. to do more research on household and commercial refrigeration units where he had a large part in perfecting the present Westinghouse household unit.

Nystrom holds several patents on hermetics. Since the war started he has been designing War equipment and will carry on similar work at Tecumseh Products Co.

York Combines Its Manufacturing & Engineering Work Under Williams

YORK, Pa.—Appointment of Llewellyn Williams, vice president in charge of engineering, to head both the Engineering and Manufacturing divisions of York Ice Machinery Corp., has been announced by S. E. Lauer, president, in a move to consolidate the two operations for greater wartime efficiency.

Mr. Lauer said in making the announcement, "The products we are manufacturing today are actually going to a single customer. Directly or indirectly, that customer is the combination of the United States and our Allied Nations. Today, therefore, we are building refrigeration and industrial air conditioning systems to fit the war picture. Where standards don't fit we build specials, and specials are the rule today. To build a special design requires the very closest collaboration between engineering and production."

"We have studied this present

situation carefully as it affects production problems and delays. We have concluded that we can move faster and more accurately and do a better war job by consolidating, under one responsibility, the engineering and production activities."

Following his appointment, which became effective March 22, Mr. Williams announced new duties for three company executives.

John G. Bergdoll, Jr., chief engineer, was appointed by Mr. Williams as his assistant, to manage the engineering and manufacturing divisions. J. C. Consley was named assistant chief engineer to take over the duties formerly held by Mr. Bergdoll. J. R. Chamberlain, appointed chief mechanical engineer, takes over management of mechanical engineering.

J. H. Vogel, general works manager, will handle all matters in connection with manufacturing in collaboration with Mr. Bergdoll.

'Wholesale Consumer' Of Refrigerators Is Defined In Price Law

WASHINGTON, D. C.—Interpretation has been made of the terms, "ultimate consumer" and "wholesale consumer" for purpose of price determination on household mechanical refrigerators under Price Schedule 102. The interpretation reads:

"For the purpose of determining the amount which may be added to the base price under Section 1380.51 (d) (2), an 'ultimate consumer' is a person who purchases a refrigerator for use in his own home; a 'wholesale consumer' is a person who purchases for use, rather than for resale, but is not an ultimate consumer. Thus, federal, state, and local government agencies, privately financed housing projects, hospitals, doctors, medical laboratories, druggists, schools and colleges are 'wholesale consumers' since such persons purchase for use rather than for resale and do not purchase for use in a home."

Buffalo Forge Co. Sales Set Records In 1942

BUFFALO, N. Y.—Although new orders and shipments of Buffalo Forge Co. reached new records in the fiscal year ended Nov. 30, higher taxes and other expenses reduced consolidated net profit for the period to \$1,042,627, after a \$522,500 provision for wartime contingencies, from \$1,145,804 in the preceding year.

Gross sales in the 1942 period were \$20,213,792, nearly double the \$10,221,870 in the 1941 period. Estimated income taxes jumped to \$3,838,638 from \$1,145,292.

"Production is practically 100% for the war effort under priorities of the highest rating," President Wendt said. "Research and development of products will be continued to better fortify our factories for an important position in post-war activities. There has been none of the usual export business which these factories normally enjoy. However, we have continued our contacts and communications."

Desert Caravan For U. S. Engineers Has All-Purpose Cooling

CHICAGO—Comfortable accommodations plus the extra luxuries of air conditioning, refrigeration, ice, and frozen foods are helping to make life more pleasant for a crew of U. S. contracting engineers someplace on the African desert who are doing business there via the desert caravan, an all-steel string of mobile units built by Lindsay Structure.

Called an "itinerant oasis" by the builder, Lindsay Structure claims that every convenience that could possibly be installed was incorporated into these caravans to provide American comforts for the 40-some men in a climate singularly devoid of modern devices to combat heat and humidity.

The mobile refrigerating unit is equipped with automatic temperature control and is capable of maintaining temperatures as low as zero to protect quick-frozen vegetables and meat.

Air conditioned sleeping compartments are furnished with beds and innerspring mattresses and hammocks.

There are lavatories, toilets, showers and running water. Hot water is supplied by electrically heated tanks. Fluorescent lights provide illumination.

Another complete unit is the kitchen on wheels equipped with refrigerator, sink, coffee urns, steam table, and all the necessities of a culinary department. As many as 500 meals can be prepared and served from this unit at one time.

Lindsay Structure explains that the exterior construction of all units in the caravan was designed especially for use in a hot, humid climate.

Lever Bros. To Handle Birds Eye Foods Abroad

NEW YORK CITY—Control of Frosted Foods, Ltd. of London has been sold to Lever Bros. & Unilever, Ltd., Edwin T. Gibson, vice president of General Foods Corp., announced last month.

"Sale of control of our British subsidiary to the Lever interests," explained Gibson, "has no effect on domestic Birds Eye sales. Frosted Foods Sales Corp., packers and distributors of Birds Eye quick-frozen foods in the United States, and a subsidiary of General Foods, always has sold its entire production in the U. S. and will continue to do so."

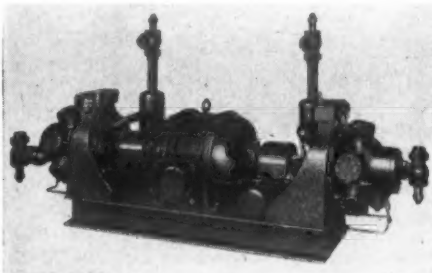
Lever Bros. & Unilever plan to develop the processing and sale of Birds Eye frozen foods extensively after the war in all parts of the world except the U. S. and its possessions, the General Foods announcement relates.

General Foods will continue to have representation on the Lever board and will cooperate with Lever management in expanding the frozen food field, Gibson reports.



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"Packaged" Units 3 & 5 H.P.—Direct Expansion and Water Cooling Systems—Commercial Refrigeration

Dr. Tressler Directs G-E Food Laboratory Activity Super-Cold Answers



H. L. Andrews, General Electric Co. vice president in charge of the Appliance & Merchandise Department at Bridgeport, visits the works laboratory accompanied by Dr. Donald K. Tressler, food authority widely known for his researches on quick-frozen food, who has recently joined the Department to head food research activities of the General Electric Consumers Institute at Bridgeport, Conn.

What If Owner Has a Dealer Sell His Box?

WASHINGTON, D. C. — Under maximum price regulation No. 139, OPA interprets the regulation pertaining to the sale of a refrigerator placed by an individual owner on the floor of an appliance dealer in the following manner:

"Where a household refrigerator is placed by the owner thereof on the floor of an appliance dealer and sold by the dealer for the owner, the sale is subject to the regulation, since such sale by the dealer is 'in the course of trade or business' within the meaning of Section 1380.201, irrespective of whether the dealer acts for himself or as agent for the owner."

Charges of Federal Trade Commission

WASHINGTON, D. C.—Super-Cold Corp. of Los Angeles filed an answer with the Federal Trade Commission last week denying charges of misrepresenting its refrigerators and refrigerator display cases and of disparaging competing lines.

Allegedly, Super-Cold Corp. advertised misleading statements with the intention of leaving the impression that their line of refrigerators was cheaper, more efficient, and mechanically superior to others.

In addition, it was alleged that Super-Cold Corp. credited their own engineers with all new developments in the refrigerator display case field during the past 15 years and that other manufacturers attempted to copy certain features of the Super-Cold front. Another allegedly false representation was the statement that 50,000 Super-Cold display cases were in use in retail stores during the years from 1928 to 1940.

In its general denial of the allegations, the company stated that some of the "misrepresentations" had been discontinued, and that others were of no importance either to themselves or to customers, and "if not already abandoned, would be willingly abandoned by respondent upon proper stipulations which would adequately safeguard respondent's rights and interests."

Hearings will be held in the near future, FTC reports.

Eggless and Butterless, These Cakes Promote Health



The "Health for Victory" movement, originated at the Westinghouse Electric Appliance Division at Mansfield, Ohio to help housewives of war workers plan health-building meals, has observed its first birthday and its adoption by more than 300 war plants. At the anniversary observance, eggless and butterless wartime cakes were given to members of the nation's first "Health for Victory" club. Mrs. Julie Kiene, manager of the Westinghouse Home Economics Department, is shown holding the basket from which names were drawn.

FACTS TO HELP YOU SHAPE THE FUTURE... RESERVE A COPY FOR MAY DELIVERY NOW!

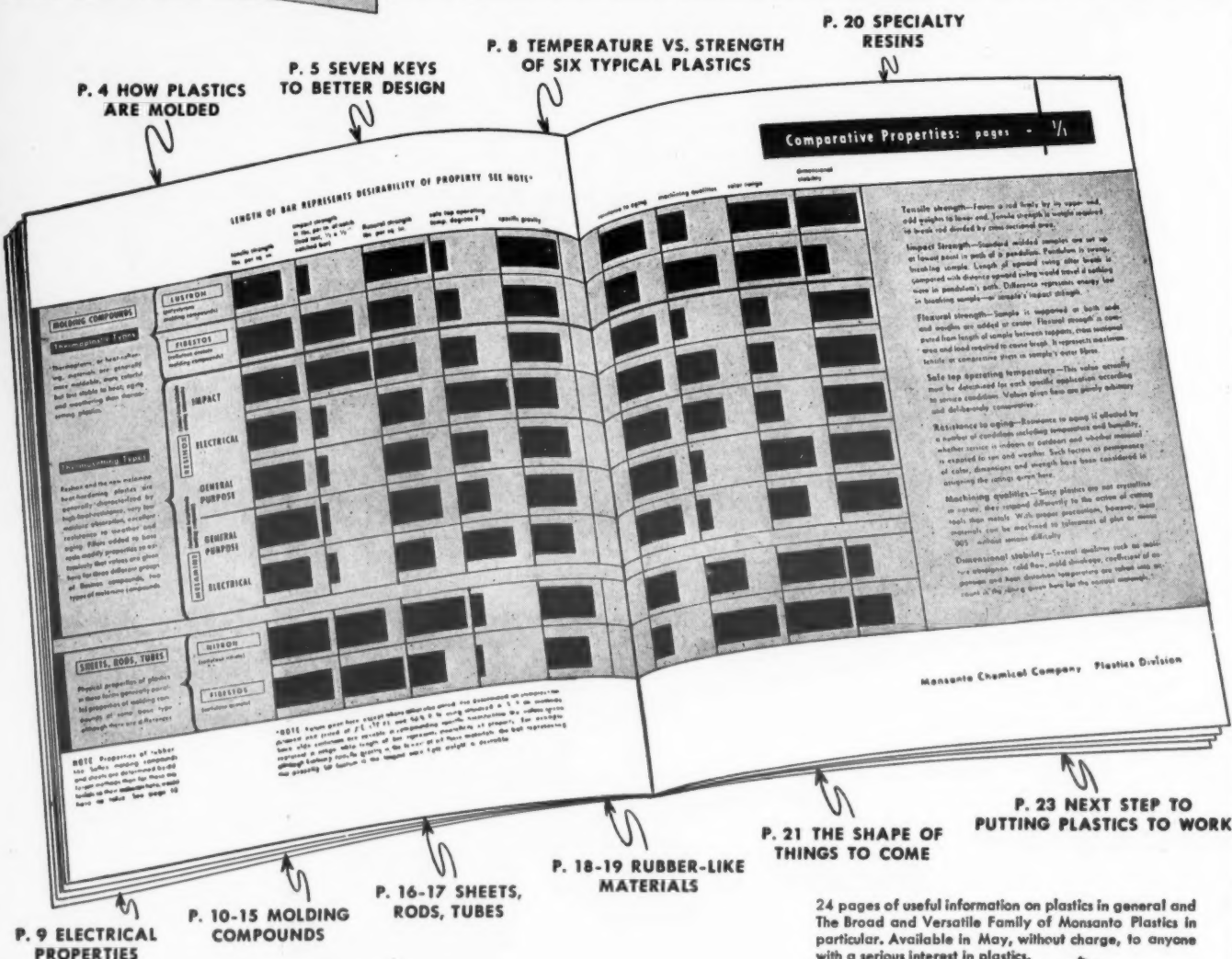
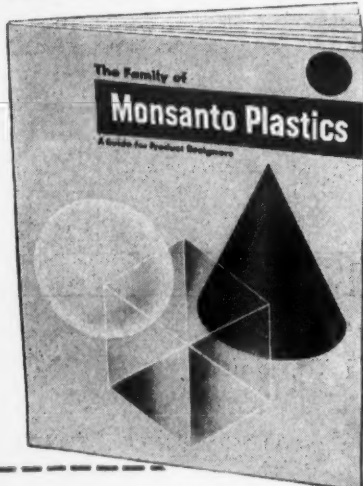
THIS handbook should be on the desk of every engineer, designer, architect and businessman working today for victory—and planning today for a more plentiful peace tomorrow.

Yet it is essential these days that no paper or printing materials be wasted—so the booklet is being announced now, a month ahead of publication, and you are asked to reserve your copy now for delivery early in May.

In these 24 pages you will find news

of many wartime advances in plastics materials and molding techniques... and many a useful suggestion on how these advances will affect the shape of things to come. The facts are here for the technical man—yet from these pages a complete stranger should get a clear picture of what plastics are, how they are used in industry and what they may offer him in his business or profession.

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Reduce Point Values On Frozen Food or Lose Stocks, OPA Told

WASHINGTON, D. C.—Drastic reduction in the point value of frozen foods and vegetables in order to move stocks and inventories and to allow space in the warehouses for the 1943 packs has been asked by frozen food industry representatives in an appeal to the Office of Price Administration, it was learned recently.

In spite of a revision in the point value of many foods put into effect this week, none of the cuts were impressive.

Since the attitude of OPA officials is in agreement with the committee insofar as the undesirable situation involving enormous stocks of unmoved frozen foods is concerned, the industrial representatives are hoping that another revision, applicable to frozen foods, will be worked out by OPA early in April.

Distribution of processed foods should be put on a regional instead of a nationwide basis, the committee believes, pointing out that city dwellers are the greatest consumers of this type of food.

'Gold Beating' Firms Find Aid in Air Conditioning

PHILADELPHIA — One of the most ancient arts and one of America's twentieth century industries have joined hands to facilitate the production of gold leaf, used in innumerable phases of modern life.

In order to obtain uniform gold leaf so thin that a pile of 1,200 sheets is thinner than a sheet of writing paper, Hastings and Co., Philadelphia, one of America's oldest gold beating firms, utilize a Carrier air conditioning system.

For centuries, gold beaters, among the most skilled craftsmen in the world, were faced with the fact that variations in temperature and humidity caused the production of variable gold leaf. Goldbeater's skin for example, between which the fine sheets of gold are pounded, is exceedingly sensitive to moisture and its characteristics change if it becomes too moist or too dry.

Air conditioning equipment in the Hastings and Co. plant, maintaining temperature at 80° F. and relative humidity at 50% regardless of outside weather conditions, has made a modern contribution to this ancient art.

Individuals Only Can Ask Service Charge Raise

DETROIT—Upward adjustments of prices or rates for refrigerator and appliance servicing charges may be obtained only by individual application, it was learned here after an appeal for a general increase in rates in this area, made by the Electrical Appliance Service Association, had been rejected.

Each servicing agency that believes it has a good case for seeking an increase above the ceilings on service charges established by OPA regulations must present its own case individually, and not as part of a group request. Specific reasons must be given as to why higher charges are necessary. Some individual requests for increases have been granted.



Now that air conditioning and refrigeration have become Victory production tools, plenty of sales and service opportunities are open to wide-awake dealers.

Gilmer Belts will keep those new production tools on the go, and build goodwill for the man who sells them. Their rugged strength and long life keep things humming without a hitch. They're available now... order through your jobber.

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Senate Committee Given Facts on Plight of Refrigeration Service

Editor's Note: George L. Johnston of the Johnston Refrigeration Construction Co., Detroit, and vice president of the Refrigeration Contractors Association of Detroit, testified recently before a Senate committee on the need for further consideration for civilian needs. The committee seemed very interested and asked many questions with respect to refrigeration problems. It is hoped that a transcript of the questions asked by the committee will be available for publication in a near-future issue.

Statement of George L. Johnston, president of Johnston Refrigeration Co., Detroit.

Before the Senate Banking and Currency Committee on Senate Bill 885.

It is a pleasure to appear before your Committee to present my views, as well as those of the Detroit refrigeration service trade, on Senate Bill 885. I am actively engaged in the refrigeration service business in Detroit. The total personnel of my organization at present numbers 39. During the past two years, I have served as vice president of the Refrigeration Contractors Association of Detroit, as well as serving on the board of directors of this organization. My activities in this association bring me in close contact with problems confronting the refrigeration service trade in general, in the Detroit area.

Possibly we, in Detroit, are more conscious of the need for an effective authority that can help us render our full measure of service in support of the War Effort. As you may know, Detroit has had an immigration of some 70,000 families during the defense and War periods. This, I believe, is the largest population increase of any city in the United States. Also, we have in Detroit, what is without doubt the greatest concentration of War production in the world.

A great deal of our service work, naturally, is in War plants and military camps, although of course, our larger volume still comes from commercial establishments and private homes. Approximately 20% of the total effort of my own organization is devoted to War plants and military camps.

To maintain refrigerators in operation in War plants, commercial establishments and in private homes is, I believe you will agree, highly essential in the support of the war effort. A refrigerator is one of the most vital units of equipment in the American home and is important in maintaining the health and morale of our people. It makes possible weekly shopping trips and thereby reduces the shopping time of customers and employees in the retail stores. It saves rubber and gasoline of private cars because of the fewer trips to the market. Serious as absenteeism may be in the war plants, it would be much worse, were it not for the refrigerators in Detroit homes.

I am not here to tell you that refrigeration is essential in connection with modern methods of market and preserving of the nation's food supply. The housewives, storekeepers and other commercial establishments, as well as the war plants and Army camps, all will testify as to the essentiality of the service being provided by the refrigeration service trades.

Our purpose in coming here, however, is to add our endorsements to the proposal to create an effective civilian supply administration. We will do our best to keep the refrigerators in our country in operation, but we need our minimum key personnel plus tools, parts and supplies. We have little hope of preserving a minimum refrigeration service unless there is an adequate and effective governmental organization to which we can look for support in the solving

ing of what already looks like an impossible situation.

You may be interested in some of the current problems facing us since the United States entered the war in December, 1941. The refrigeration service industry was seriously affected in the following manner:

1. Because of the attractive wages and possibility of deferment from military service, a substantial number of our employees left the refrigeration business and accepted work in defense plants.

2. Our industry is comparatively new; therefore, a large number of our employees were single men and were among the first called. Because of their technical skill, many of them were offered attractive ratings in the armed services and enlisted.

In our own case, out of 26 trained servicemen, six have already been inducted into the armed forces and two sought employment in defense plants as a means of deferment. Of those who now remain, 18 are subject to call, presumably within the next few months, as they are now classified in 1A and 3A. My case, I have reason to believe, is not exceptional. I know that all servicemen in my vicinity have similar problems.

In fact one authority has published the statement that 55% of the refrigeration servicemen employed by the industry in 1941, are no longer available and scant success has been found in replacing them.

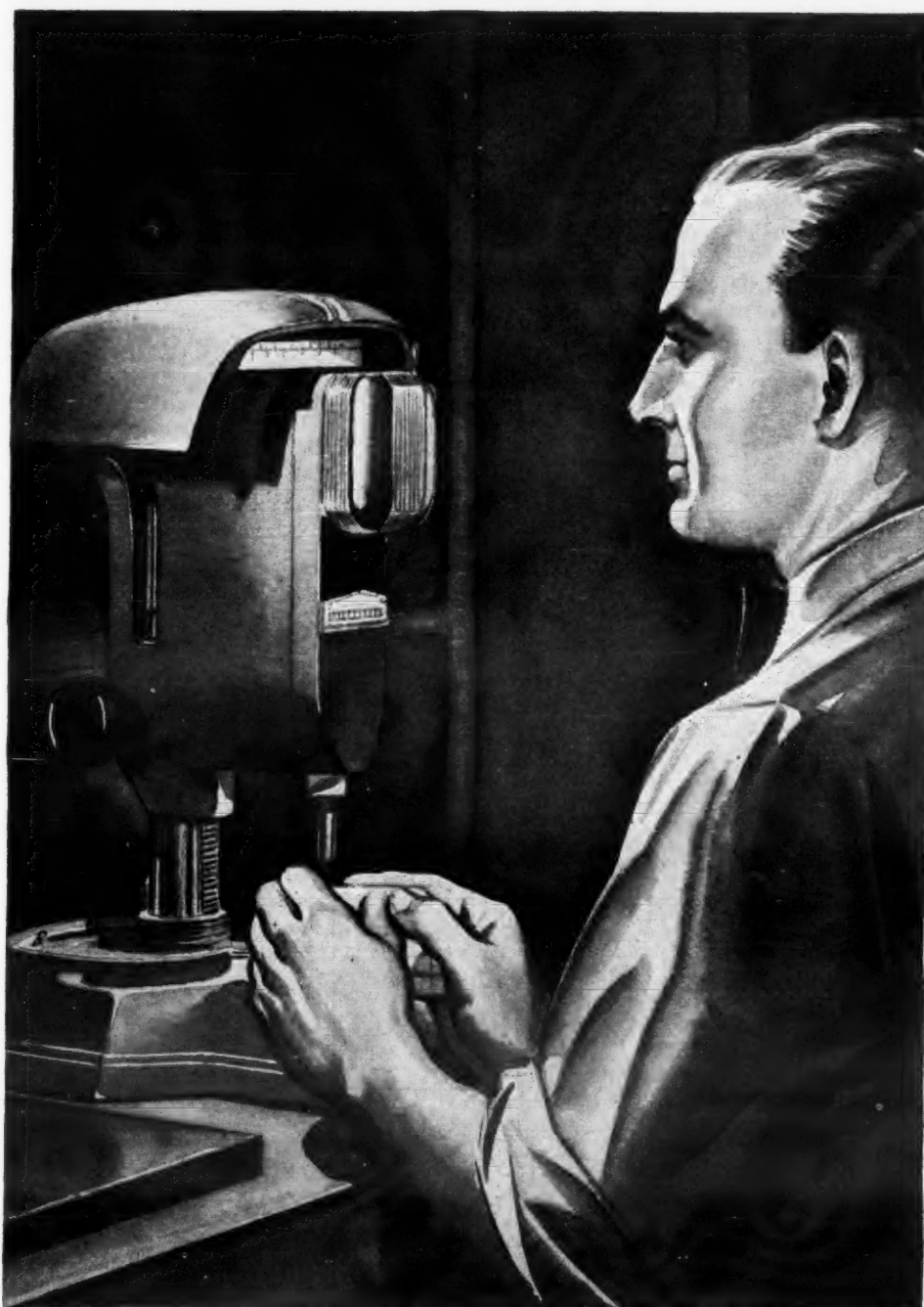
Additional burdens now imposed upon the refrigeration industry in the direct war effort consist of:

New methods of manufacturing and using new cooling applications such as: rivet coolers; oil coolers for honing; sheet stock coolers for aluminum sheets; sub-zero coolers for tempering gauge steel; shot coolers; air conditioning for precision rooms; cooling for welding tips; blood banks; water coolers; Army camps and plant cafeterias.

We are beginning to feel the effects of an additional service burden arising from the fact that we have approximately 30,000 old refrigerators that normally would have been traded in for new refrigerators and "junked," which we are obliged to keep in operation.

Out in Detroit, we are a loss to know just what to do concerning parts, tools, shop equipment and supplies. Even though we had the manpower, we would be unable to operate without these material supplies. This matter has been discussed at great length, from time to time, at our Association meetings. Our authorized representatives have worked diligently on the problem, but are unable to find someone of authority to give us a decision on these matters that will enable us to obtain relief. For example, the new P-126 order strictly rules out all domestic refrigeration parts as well as tools and shop equipment.

We are quite in sympathy with the purposes of this Bill, because nowhere in our present setup of government does there seem to be a sufficiently strong unit functioning in behalf of the civilian population. We feel that it is a step in the right direction to establish a centralized responsibility to which we can look for a hearing on problems of the kind which we face in the refrigeration service business in Detroit.



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In countless war plants engaged in the manufacture of vital parts for aircraft, tanks, ships and guns, it is necessary to control temperature and humidity within close limits to insure the extreme accuracy of size and fit so necessary to dependable performance of the finished part on the field of battle.

Such accuracy cannot be obtained without the help of air conditioning and refrigeration. This is but one of the contributions the refrigeration industry is making to Victory.

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This same precision will be required in the mechanical products, which in the fields of land and air transportation, better products for the home, and better living and working conditions, will make for a new America.

We salute the Refrigeration Industry that today serves, and tomorrow will serve so well, the American people.



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Office of Civilian Supply Needs More Power To Protect Public

Weiner Testifies Repair Services Going To Pot; Seeks Manpower Relief For Small Business

WASHINGTON, D. C. — Seriously disturbed by shortages of manpower and repair parts in the electrical appliance service trades (among other things), Joseph Weiner, Director of the WPB Office of Civilian Supply, appeared last week before the Senate Banking and Currency Committee to ask for increased powers to protect the tottering civilian economy.

He cited results of a survey his office had made in the Pittsburgh area, which definitely demonstrated that repair services for electric refrigerators and other appliances have deteriorated past the danger mark.

A condensed version of his testimony follows:

As a nation we are relatively new at this terrible game of "total" war. We have made many mistakes in mobilizing for it. One mistake we cannot afford to make—the fatal one—the one that lost the war for Germany in 1918—the failure to maintain the home front adequately.

I say this not as one who advocates a "business as usual" attitude. As the record, including the observations of investigating committees of Congress will show, the Office of Civilian Supply was an outstanding advocate of conversion and of curtailment of non-essentials since the summer of 1941.

In pressing for a protection of the truly essential civilian economy, we have tried to tie that concept down to realities. We have sought to prevent it from becoming a slogan which could be used to block an all-out war effort.

Having taken that position in the past, I feel I have earned the right to insist that the policy of maintaining essentials for civilians set out in section 1 of S. 885 be accepted unreservedly as our national policy.

We cannot increasingly divert ever greater amounts of materials, manpower and services without making reasonably sure that the withdrawal doesn't destroy the very economy that makes more war production possible. The production of planes, ships, tanks and guns will surely level off at some artificial ceiling, not reflective of a total mobilization for war,

if we allow diversions of resources to war to create an uncontrolled impact that may handicap us in achieving a total utilization of our resources.

War requires the diversion of vast quantities of metal to the making of ships, tanks, guns, and planes. Yet it would be a foolish policy to carry on this necessary process of diversion without making sure that the essential civilian requirements are met. The railways which are necessary to transport the raw materials and finished products for war must be maintained. The machinery of the processing plants kept in efficient working condition. Operating supplies must be furnished.

The workmen who must be relied upon to mine the metal, process it and shape it into finished combat munitions must be supplied with the necessary quantity of metal to maintain their house and necessary living facilities, means of transportation, and hospitals and medical equipment, and all of the other items which enable them to continue to produce efficiently. The same would be true of diversions of any important factor of production or distribution other than metals. The same is true of rubber, chemicals, food, petroleum products. The same is true of the vital services such as transportation, power, communications. The same is true of manpower, a fact we have only begun to realize.

Inability to maintain adequate personnel for medical and health service, transportation service, laundry service, food distribution and restaura-

rant service will surely undermine the ability of our civilian economy to produce in the vast quantities which are necessary.

Who Helps the Civilian?

Many persons look to the Office of Civilian Supply in the War Production Board as the responsible war agency for assuring the essential civilian supplies. That may have been true at one time. Early in the defense effort the President issued Executive Order 8734 in April, 1941 establishing the Office of Price Administration and Civilian Supply and vested the body with considerable authority to maintain the essential civilian economy. Subsequently, however, Civilian Supply was transferred to the Office of Production Management and the War Production Board, and lost its identity as a major war agency established by Presidential order.

Today the Office of Civilian Supply is one of many dozen organizational units of the War Production Board. It has no statutory or executive order authority. It has no official responsibility on behalf of civilians for food, housing, transportation, manpower and other resources which are vital to the maintenance of essential civilian supply. Its role is largely an advisory one within the War Production Board, and a volunteer one elsewhere.

Clearly, in its present position and with its present functions, the Office of Civilian Supply cannot adequately represent civilians alongside the Services of Supply for the military and the Lend-Lease Administration and the Board of Economic Warfare for the foreign supply.

This has become an intolerable situation today when the civilians of the country are facing serious shortages of civilian supplies and services brought about by the war. The situation is aggravated by the multiplication of supply agencies which tear off individual segments of the civilian economy. If there ever was a time for determining essential civilian needs and integrating the forces of the government for assuring those needs—the time is now.

The most practical way of presently coping with the situation is to establish, now, a single, central, civilian supply agency which represents well-defined portions of the civilian economy with authority at the various multiple supply agencies, in face of the impending shortages.

My position is that if one set of requirements, for example military requirements, is being represented by an agency with authority in the field—such as Services of Supply for the Army—it is not realistic to expect that requirements for civilians be as adequately represented and integrated at all of the supply agencies without a single, central Services of Supply for civilians.

How 'Czar Agencies' Work

The individual czar agencies, as I have pointed out before, are primarily responsible for the production of goods and services for all the claimants—military, foreign and domestic civilians. These czar agencies may have to decide among the various claims of the military, export and civilians; but their principal job is supply. They should not be diverted from that job by considerations extraneous to it. I am also impressed by the fact that they should not be afforded too easily the alternative of advocating curtailment instead of producing what is needed.

Let's just take one item, for example, heating stoves. The Office of Civilian Supply determines how many stoves are necessary for civilians during the coming year and puts in a claim before the War Production Board for the allocation of the necessary steel to produce those stoves. Suppose the War Production Board makes an allocation of the necessary steel. From that point on there is no follow-through to assure that the other resources—manpower, transportation, fuel, etc.—are available to produce these stoves which are necessary for civilians.

For instance, the Petroleum Administrator for War may decide that there is not sufficient fuel oil to permit an allotment for heating the stove factory. No central war agency has planned all the way through to assure this essential for stove production. Or the Manpower Commis-

sion may decide that it wants the workers of stove factories in certain labor areas to be transferred to munitions production and engages in a campaign to effect the transfer. There is no strong Civilian Supply agency to protect the manpower needed to produce stoves.

A transportation slowdown may develop which results in delay in the delivery of these stoves in time for the winter season. No central agency will see to it that the Office of Defense Transportation assures delivery on time. Once the stove is delivered to the consumer and put into operation, action of the War Manpower Commission to withdraw repair service personnel, and action of the War Production Board in failing to provide repair parts may prevent these stoves from being used to meet the essential civilian requirements for which all the previous resources were expended.

Thus far the attrition of the civilian economy has been due largely to materials shortages. Now, however, we are beginning to develop serious bottlenecks in labor and fuel. Manpower particularly is becoming critical. The manpower problem thus far has been localized. Its prospective spread is evidenced by the estimates of the War Manpower Commission that 3.2 million workers will have to be withdrawn from civilian industries and trades for selective service and war industries.

Keep the 'Service' Systems

The core of essentiality of civilian industries and trades must be preserved no matter what the manpower demand may be. As the manpower and other bottlenecks squeeze tighter, civilian production will be decreased even in those fields like textiles and other soft goods where materials are not short. Consequently, we may expect all parts of the civilian economy to shrink as the war goes on. This is not only true of production but also of the distributive and service trades. One of our most serious problems is to maintain an effective distribution and service system on short rations.

How skinny the civilian economy becomes depends, of course, on the length and intensity of the war. For the immediate future no one expects the bottom to drop out. Estimates for 1943 indicate that the quantities of consumer goods and services purchased will be about 15% below 1942 and perhaps as much as 20% below in the second half of 1943. This will still be comfortably above the minimum or bed-rock of consumer requirements as estimated by the Office of Civilian Supply.

The squeeze will come much nearer to the bed-rock level for services, however, than for consumer goods.

This, however, does not begin to tell the whole story. Such figures show little of the quality changes that have taken place—as in the substitution of wood and felt for steel beds and bedsprings.

Again, these figures say little or nothing of the provision for replacements or repair services—a field in which the civilian consumer is being hard hit. It must also be remembered that both the armed services and export authorities are powerful competitors with civilians for many items, including food, clothing, tobacco, and medical services. As the military and export demands go up, consumption by civilians will fall.

If we endeavor to look ahead over the next 12 to 18 months and evaluate the difficulties with which civilians are likely to be confronted, large parts of the field seem fairly clearly blocked out.

Already we have experienced shortages in such things as batteries for hearing aids and for radios used by farmers in non-electrified rural areas as well as other shortages, particularly in services for civilians. As the war goes on, there are likely to be increasingly severe shortages on nearly the whole of the civilian front, from food and clothing to laundries and fuel, and from household repair parts to medical services.

In many areas the shortages are likely to be so severe that unless appropriate action is taken in advance, supplies to civilians will fall below the minimum essentials. Then civilian health, safety or morale will suffer, and war production itself will inevitably decline.

(Continued on Page 13, Column 1)



MEMO to G-E Distributors and Contractors: By helping to meet the air conditioning and industrial refrigeration needs of war industries, you are doing much to speed production and improve products. To back you up in this work . . . and to explore new markets . . . G-E is advertising consistently in Time, Newsweek, Business Week and 20 industrial papers reaching your prospects in many manufacturing fields. Reproduced here is the current month's message.

Air Conditioning adds a New Dimension

Originally, people thought of air conditioning only in terms of temperature. It cooled the air on a warm day. Temperature was air conditioning's first dimension.

Then came a second dimension . . . movement. Air had to be moved . . . under control.

Then a third dimension . . . humidity . . . control of the amount of moisture in the air.

Then, air conditioning took on a fourth dimension . . . dust exclusion.

And now, air conditioning is cooperating in an important new field . . . controlled air pressure. This is needed for the testing of men and equipment under the conditions of stratosphere flying.

Today, air conditioning faithfully repro-

duces exact climates . . . from the parched heat of the Sahara to the frigid cold of Northern Russia. The equipment that does this must be more flexible, more compact than ever before . . . with precise control of temperature and humidity.

This equipment . . . from General Electric . . . speeds up America's war effort. When peace comes, this improved air conditioning will become available for many new uses.

Then, as now, look to General Electric as the outstanding supplier of up-to-date air conditioning and industrial refrigeration equipment of all kinds.

Air Conditioning and Commercial Refrigeration Department, Division 434, General Electric Company, Bloomfield, New Jersey.

Air Conditioning by
GENERAL ELECTRIC

Functions Outlined For Proposed 'Civilian Supply Administrator'

(Continued from Page 12, Column 5)

These excessive shortages which cut below the danger point are in most cases not likely to arise simply because of tremendous military demands. Rather, the excessive shortages will arise from failure to achieve a reasonably adequate balancing, integration and control of the several competing civilian demands on limited supplies and resources.

Imperfect coordination of price controls, tax restrictions and other measures with the objectives of military and essential civilian production and distribution can make such production and distribution financially unattractive or even impossible.

Without skillful and continuous integration of all demands and controls, and especially without an integration of the requirements of the civilian economy, there will be relative surpluses in some areas and hence acute shortages and suffering in others.

In the final analysis, the basic problem of maintaining civilian supply is one of assuring the devotion of adequate quantities of productive resources to specific essential civilian requirements. The general public and business communities, for the most part, are equipped with adequate funds to obtain these goods.

In other words, it is the allocation of materials, facilities, manpower and services to meet essential civilian requirements at the various supply agencies that is the primary concern of the Services of Supply for civilians.

The Administrator's Job

Although relatively simple in concept, this function would be delicate and complicated in operation. Its performance would occur at four levels. First, the Civilian Supply Administrator would draw up a general program of essential requirements in terms of the finished goods and services which civilians and the distributive trades will need. It would be the duty of this Civilian Supply Administrator to evaluate carefully the implications of the Commander in Chief's decisions for the civilian economy.

With the benefit of exchanges with other claimants at the various requirements committees and the co-operation of statistical units of the various supply agencies, he would determine the extent of the demands which the war program might make on the civilian economy and, if it were possible, develop resourcefully a plan whereby these adjustments could be made without impairing the essential civilian economy and with a minimum of damage to civilians.

Having staked out essential civilian supply, the Civilian Supply Administrator is faced with the technical job of translating the programmed products and services into the amounts of critical materials, facilities, manpower and services which he will claim before the appropriate supply agencies to produce and distribute this essential civilian supply.

Suppose, for example, that his overall program called for certain quantities of clothing for each civilian. The Administrator would estimate the amount of and identity of the raw materials necessary to the production of these clothing requirements together with the necessary manpower and transportation. These claims he would add to similar totals for other essential civilian requirements. Then, he would file his claim for a total quantity of a given resource for civilians with the appropriate supply agency.

Would Be 'Claimant' Agency

There the proposed requirement would be added to the claims of the other claimant agencies—the military and export and others—for a given supply and the total measured against the anticipated supply. Perhaps, as is the usual case, requirements thus originally totalled, exceed anticipated supply and the claimants are asked to scale down their demands or the supply agencies make a determination scaling down certain demands.

The Civilian Supply Administrator then must determine whether or not he will insist upon a reinstatement of his original demand. Suppose, for example, his claim for wool was

initially submitted and endeavor to work out the best practicable adjustment between the competing civilian demands for the resources allocated for civilians.

For example, once a determination of the amount of wool available for civilians has been made, the Civilian Supply Administrator must divide the amount of wool into the number of kinds of wool products—coats, suits, sweaters, blankets, etc.—and direct the agency responsible for the production of wool products to allocate the civilian supply of wool for the indicated purposes.

Once the determination of what is to be produced has been made by the Civilian Supply Administrator, the job of executing the determination and dealing with the individual manufacturer, is the function of the supply agency and not the Civilian Supply Administrator. The supply agency would be the responsible production agent for the Civilian Supply Administrator much as it is for the Army's Services of Supply.

The last stage of the operation concerns the determination of how the finished product is to be distributed

between wholesalers, retailers and eventually public consumers.

For example, the Civilian Supply Administrator should be able to see to it that the particular supply agency ordered the distribution of the finished wool garment in such a manner as to assure a fair and equitable supply to the customers of small rural concerns as well as to the customers of the larger, more prosperous and well organized urban department stores.

Other Functions Outlined

He would be responsible for giving directions to the various supply agencies concerning equipment, operating supplies and manpower, which would enable those wholesalers and retailers, wherever essential, to continue in operation and thus sustain the business structure necessary to carry essential goods and services to the civilians.

Furthermore, if it were necessary to institute consumer rationing in order to assure fair and equitable distribution to the civilian population, the Administrator would be re-

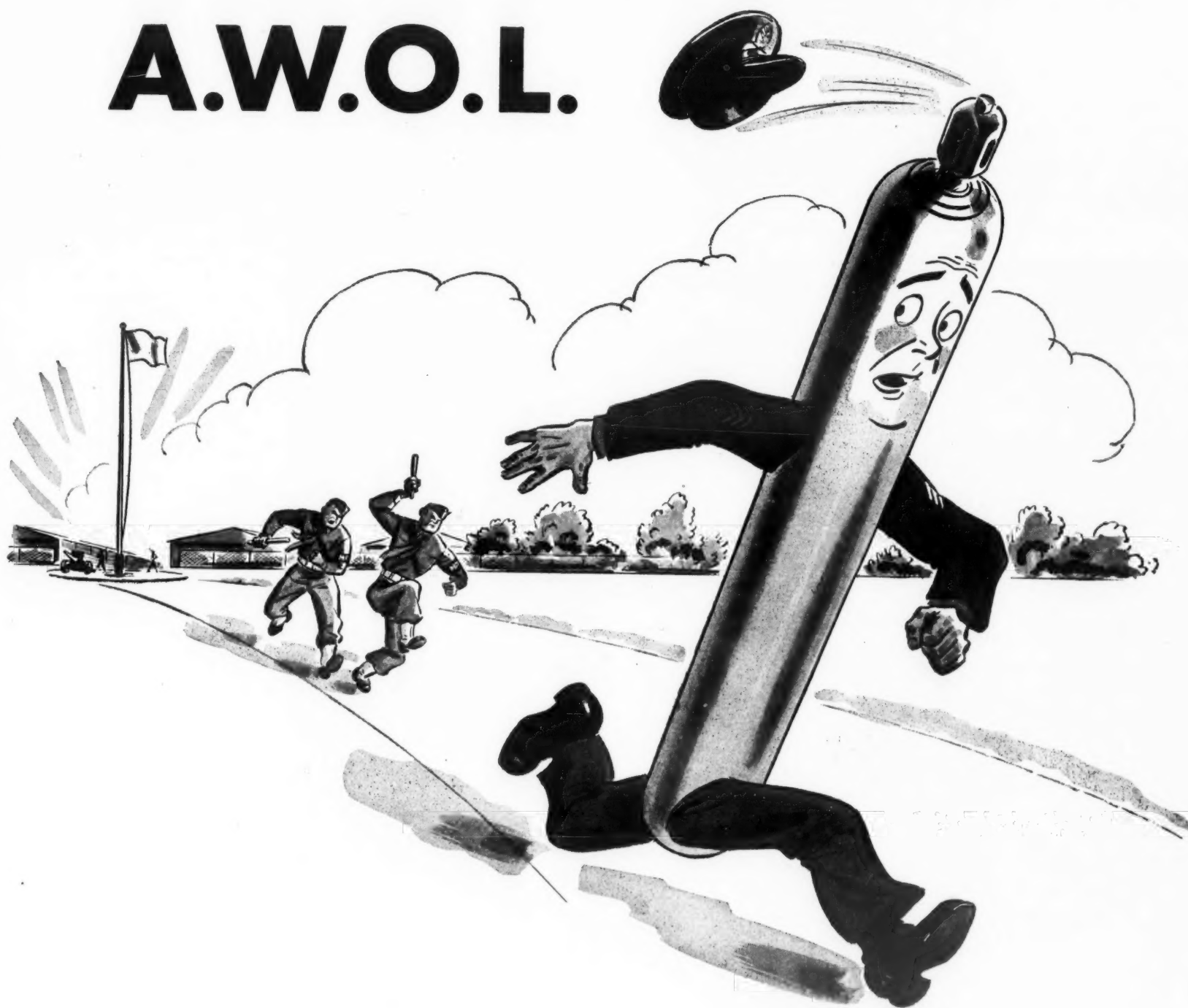
sponsible for determining when and where that rationing should be inaugurated.

The civilian economy has come to depend more and more on small business concerns for its necessary production and distribution. Big business, particularly in the metals fields, has gone to war production. Civilians must therefore depend for their newly-produced supplies upon the smaller concerns.

The distributive and service trades have always consisted in the main of "little guys." It is apparent, therefore, that the Civilian Supply Administrator has a vital concern in the effective functioning of small business.

This history of the Office of Civilian Supply bears out this tie-up between civilian supply and small business. The Congress of the United States expressed this realization when it specifically mentioned in Section 1 of the Smaller War Plants Act that the Chairman of the War Production Board through his Deputy for Smaller War Plants should "... cooperate to the fullest practicable

(Concluded on Page 14, Column 1)



SEND HIM BACK immediately to his post (Carney's Point, N. J.). You'll recognize him instantly—he's the empty "Freon" cylinder in your shop.

He's needed for war duty—to carry "Freon" to war production plants, to military bases, and to you in your job of servicing vital civilian needs.

When you return him, be sure to include that brass cap that belongs on the valve. We can't get new caps for love or money—and a cylinder without one is almost as bad as no cylinder at all.

RETURN CYLINDERS THE INSTANT THEY ARE EMPTY



KINETIC CHEMICALS, INC., MAKERS OF "FREON" SAFE REFRIGERANTS

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants

Weiner Emphasizes To Senate Group Need of Planned Aid To Repair Trade

(Concluded from Page 13, Column 5)
extent with the Director of Civilian Supply . . . in the issuance of all orders limiting production by business enterprises, with a view to insuring that small business concerns will be most efficiently and effectively utilized in the production of articles, equipment, supplies, and materials for both war and essential civilian purposes."

Long before this—back in 1941—Civilian Supply was a leader in obtaining preferences for small business in the drastic curtailments of consumer durable goods. Small businesses were not curtailed nearly as drastically as larger businesses. As a matter of fact, in some cases the Office of Civilian Supply has gone whole-hog in its determination to preserve and utilize the facilities of small business.

For instance, when the amount of steel available for manufacture of stoves had fallen to very low levels so that if divided among the manufacturers in the stove industry it would have bankrupted scores of small concerns, the Office of Civilian Supply urged that only small business located in loose labor markets be permitted to make stoves.

If this program had not been adopted by the War Production Board the whole stove industry would have been cut to 25% of its 1940-1941 rate of production and the survival

of the smaller concerns would have been doubtful indeed.

Under the program urged by Civilian Supply, the larger units of the industry were prohibited from making stoves with the result that the smaller manufacturers produced at the rate of \$40,000,000 per year (in addition to large military stove orders) as compared with \$12,000,000 which would have been their allotment otherwise.

The large stove firms were capable of converting to war production and did so. The result was a substantial benefit to the war program any way you look at it.

Among the most serious problems confronting the civilians are those of maintaining a healthy distributive system and adequate services. We have begun to note alarming breakdowns of distributive and service systems.

This phase of the economy has been, relatively speaking, subordinated by virtue of the necessary emphasis of the War Production Board and other agencies on the problems of war production.

Moreover, up until recently the distributive system of the country was able to live off the fat of accumulated inventories of civilian goods and the bottlenecks of manpower and transportation were not yet critical. Today, however, the cutbacks at the manufacturing level have caught up with

our great wholesale and retail trades. Inventories have dwindled and are sometimes no longer available.

Manpower and transportation have begun to have a serious impact upon maintenance of essential distributive activities and price controls have established ceilings against which wholesalers and retailers frequently bump their heads in dismay. Merchandise shortages have been found to be the principal problem of smaller distributors.

Case For Service Trades

The service trades particularly are faced with serious manpower shortages. Many service establishments have been forced to institute some form of customer selection in order to take care of repair business now beginning to flood them. Shop machinery repairs have not been made in some cases. Repair and replacement parts for many civilian items are already becoming quite scarce.

It is in the distributive and service fields that the small man is king. The serious situation that is arising in these trades means that the small merchant and repair man will suffer most.

These small businessmen are the backbone of our distributive and service systems. They express the idea of freedom of American enterprises. We must look to them during these war years to provide the necessary

goods and services to the civilian population.

The problem of the distributive and service trades thus far has been primarily local. The systems are not yet threatened. Individual crises are arising with increasing tempo in many localities, particularly war communities.

Survey Shows Parts Problem

The Office of Civilian Supply has surveyed the distributive and service trades in the Pittsburgh area, which represents a good cross-section of American industrial communities. Let us take the electric appliance service trades—the shops which repair small electric motors, radios, refrigerators and vacuum cleaners and all other household electric appliances which have come to be such an integral part of American living.

Thirty-six of these shops were surveyed. Manpower and the supply parts were the most critical problems. One-half of these shops were having difficulty securing skilled employees due to the draft and the premium paid for skilled mechanics by war plants.

Four out of every 10 full-time workers left the electric appliance service establishments from 1942 to 1943. Some of this decline was undoubtedly due to the decrease in new appliance sales.

Special services had already been curtailed due in part to manpower shortages. With six out of every 10 men servicing electrical appliances of draft age, and replacement of skilled workers virtually impossible, many proprietors felt that they would have to close. 61% of these establishments have had difficulties securing parts and supplies for their electrical appliance repairs. Some parts are almost impossible to get.

You can imagine the severe difficulties of small shops in the farm areas to obtain parts if large urban areas are short of such supplies. The trouble hasn't always been with the failure of the War Production Board to allocate materials for such production.

The manufacturers of these parts find that small production runs for repair parts only are expensive. The price ceilings imposed on them do not take into account the higher unit cost and the offers for war manufacture are so good that they do not engage in further manufacture of repair parts for consumer appliances.

What is now becoming a difficult situation in the distributive and service trades will be an impossible one six months from now unless vigorous action is taken soon.

With those difficulties which stem from inadequate supplies of repair and replacement parts, we are familiar. The Office of Civilian Supply from the outset has maintained that the War Production Board must allocate sufficient amounts of critical materials to permit such production.

The amounts of critical materials involved are small. The adverse effect upon the population will be large if these repairs are not forthcoming.

The amount of critical materials necessary to produce repair parts for individual consumer goods is small. For instance, repair parts for domestic mechanical refrigerators for 1943 will take about 500 tons of carbon steel and small amount of other scarce metals.

Sewing machines for the home would need about 230 tons of carbon steel and exactly four tons of alloy steel. The metal required to maintain 12 million vacuum cleaners now in the hands of consumers is only 140 tons of carbon steel, 72 tons of alloy steel, 34 tons of copper, and 14 tons of aluminum this year.

These vacuum cleaners, no less than other similar household items, are necessary to keep housework time reduced, thus freeing more women for industry work and to keep the American standard of living from descending into the scrap heap.

The Case For Refrigerators

For instance, if we were to stop further manufacture of repair parts for mechanical refrigerators and the breakdown of refrigeration meant that they could no longer be used, the householder who sought necessary refrigeration for food would have to buy a plain, ordinary ice box. That means that we would have to manufacture more ice boxes, which in turn take at least six pounds of metal each. Skimping in one place may cause bulging in another.

We are definitely of the opinion that failure to maintain production of necessary repair parts is "penny

wise and pound foolish." The Office of Civilian Supply has been fighting a rear guard action to prevent the discontinuance of materials for such production.

In addition, it has become necessary to follow through to see to it that there is the actual production needed. And unfortunately, we are without authority to assure that there are repair men to make the necessary repairs.

For the civilian area in which my office operates I am authorized by the Chairman of the War Production Board to "formulate periodic estimates of present and anticipated civilian requirements of raw materials, finished goods, and services" and present these estimates to the War Production Requirements Committee.

This has involved large-scale programming for civilian use of metals, detailed programs covering the numbers and kinds of individual consumer articles like baby carriages and tooth brushes required in a given period, recommendations to the Requirements Committees on the amounts of critical materials required for civilians, and recommendations for appropriate preference ratings for civilian production and distribution.

To date the Office of Civilian Supply has prepared nearly 300 programs claiming materials or products for civilian requirements.

The Office of Civilian Supply is also authorized to distribute equitably among competing civilian demands the materials, goods and services available for civilians. It has not always been possible to exercise this function, however, primarily due to confusion between the Industry Divisions and the Office of Civilian Supply as to their responsibilities.

Aside from these more definite functions, the Director of Civilian Supply is also in the nature of a general advisor to the Chairman of the War Production Board on matters pertaining to civilian supply. Without specific charter, this Office has begun to determine manpower needs of civilian industries, trades and services so that minimum needs may be maintained.

Also, it has sought to protect essential civilian distributive and service trades in a dozen different ways. Finally, it has determined the need for rationing certain types of goods to civilians and sought to have the Office of Price Administration ration where and when necessary to protect the civilian population.

In recent months there has been a tendency to diffuse responsibility and authority with respect to the civilian economy among a large number of agencies. The Office of Civilian Supply, however, has not been officially represented before these czars.

Recognition Vital Need

The Office of Civilian Supply has no official recognition before the War Manpower Commission or any of its major committees. The implications of this are striking.

For example, the distributive trades and services are being called upon to yield millions of workers in order to meet the demands of Selective Service and war industries. Manpower is the most critical element for civilians during the next year.

The manner of withdrawal of workers from civilian occupations may determine whether or not the home front will crack. Yet there is no powerful representative of civilians before the manpower authorities.

The Office of Civilian Supply is therefore operating in an ever narrowing circle—the left-overs being dumped into it for attention, to say nothing of the difficulties spent simply in finding out just what has been left over. No agency which purports to represent civilians in the war administration can hope to fulfill this responsibility under these circumstances. You can't protect 120 million civilians from a cubby-hole in Washington.

The split-up of civilian supply responsibilities has resulted in continual jurisdictional problems and in inevitable overlaps. At the present time there are eight agencies vying for the job of programming the civilian portion of the national economy: Office of Civilian Supply, Office of War Utilities, Office of Defense Transportation, Petroleum Administration for War, Office of Rubber Director, Department of Agriculture, Facilities Bureau, National Housing Agency. The result has the earmarks of a jig-saw puzzle.

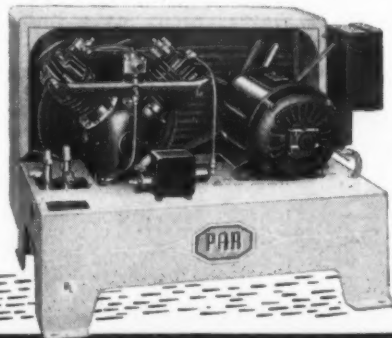


Emphasis on Education

Today . . . in civilian life and in the services . . . the emphasis is on specialized industrial training and education. As a result, in tomorrow's peace, more people than ever will be equipped to judge keenly the merits of mechanical products. This means the future market will quickly recognize equipment of superior performance . . . products that have kept pace with new developments. PAR Condensing Units have always met the requirements of the most exacting buyers . . . will continue to do so in the world of tomorrow where appreciation of outstanding craftsmanship will be keener than ever.

Manufacturers of
PAR Commercial Refrigeration Equipment

PAR
DIVISION



LYNCH MANUFACTURING CORPORATION • DEFIANCE, OHIO, U. S. A.

Meaning of Production Schedules Given In Revised Order L-126

Editor's Note: Limitation Order L-126 as amended March 27 set up a whole new series of schedules of production limits and required specifications for the various types of commercial refrigeration equipment and accessories thereto. The following outline gives a brief explanation of each of the six schedules in the revised L-126, the text of these schedules having been published in the March 29 issue of the NEWS.

WASHINGTON, D. C.—The six "schedules" in the amended Limitation Order L-126 now establish specific limits and specifications for nearly every type of refrigerating equipment and part. The following outline describes how various types of equipment are affected:

1. Self-Contained Drinking Water Coolers

Schedule I as amended—Self-Contained Drinking Water Coolers.

1. Permits three sizes of marine type coolers for use aboard ship: No other types or sizes permitted.

5 G. P. H.—1 Bubbler, 1 Glass Filler.
10 G. P. H.—2 Bubbler, 1 Glass Filler.
20 G. P. H.—2 Bubbler, 1 Glass Filler.

2. Limits amount of copper per size as:

5 G. P. H.—11 lbs.
10 G. P. H.—15 lbs.
20 G. P. H.—20 lbs.

3. Permits delivery of coolers completed prior to July 3, 1943.

4. Permits assembly of coolers from fabricated parts on hand.

5. Effective date: April 6, 1943.

2. Refrigeration Condensing Units

Schedule II as amended—Refrigeration Condensing Units (All Types).

1. Prohibits units below 1/2 h.p.
2. Prohibits water cooled units below 3 h.p. except:

(a) Installations where ambient temperature is 110° F. or higher.
(b) Installation in air-tight room or enclosure.

(c) For low temperature applications—Minus 40° F. and below.

3. Prohibits air cooled units above 2 h.p. except 3 h.p. air cooled unit for Army.

4. Prohibits duplex units 20 h.p. and below.

5. Basic compressor bodies limited to one-half the number of models by h.p. rating.

6. Limits number of models to one for each h.p. rating for:

(a) Suction temperatures of 50° F., 20° F., 40° F.

(b) Refrigerant classification of Ammonia, Carbon dioxide, Freon.

Exception: Motor of larger h.p. may be used for applications below minus 10° F.

7. Motor pulley and belt drive must be shipped with unit.

8. No unit to be produced in a h.p. rating or using a refrigerant not produced prior to May 1, 1942.

9. No metal bases on units less than 3 h.p. or above 20 h.p.

Exception: Aboard ship, aircraft, advanced bases.

10. No metal fan shrouds on air cooled units below 3 h.p.

Exception: Aboard ship.

11. Copper tubing for interconnecting refrigerant lines prohibited larger than 3/4 inch size (O.D.).

Exception: Aboard ship and at advanced bases.

12. Permits assembly of fabricated parts in inventory prior to July 3, 1943.

13. Effective date: April 6, 1943.

3. Coil Assemblies For Condensers or Coolers

Schedule III as amended—Coil or Tube Assemblies for Condensers or Coolers.

1. Prohibits use of non-ferrous metals and seamless steel tubing for all coil or tube assemblies.

Exception: Water cooled condensers and use aboard ship.

2. Limits wall thickness of steel tubing except for integral fin tubing.

3. Limits fin thickness to 4% of fin weight or a maximum of .023 inches.

4. Limits use and tin content of protective coatings.

(a) 7% tin.

5. Limits use of copper in water cooled condensers as follows:

(a) 7 lbs. per h.p. for self-contained units.

(b) 7 lbs. per ton for suction temperature above 30° F.

(c) 8 lbs. per ton for suction temperature 0 to 30° F.

(d) 9 lbs. per ton for suction temperature below 0° F.

6. Permits assembly from fabricated parts in inventory prior to Sept. 2, 1942.

7. Effective date: April 6, 1943.

4. Valves, Fittings, Accessories, Parts

Schedule IV—Refrigeration Valves, Fittings, Accessories, & Other Parts.

1. Limits sizes and types of valves, fittings and accessories.

2. Restricts use of non-ferrous metals for some valves and accessories.

3. Restricts use of stainless steel except for small essential parts.

4. Permits completion of valves, fittings, and accessories in process, not in conformity with the schedule, for a period of 60 days.

5. Permits sizes and types not in conformity with schedule for repair and maintenance.

6. Exception given use aboard ship and in advanced bases.

7. Effective date: April 6, 1943.

5. Reach-In and Walk-In Coolers

Schedule V—Commercial Reach-in and Walk-in Refrigerators.

1. Permits only four sizes of reach-ins—20, 45, 65, and 85 cu. ft.

2. Permits only nine sizes of walk-ins—6x6-ft., 6x8-ft., 8x8-ft., 8x10-ft., 10x12-ft., 10x16-ft., 10x20-ft., 10x24-ft., 10x30-ft. All 7-ft., 6-in. high.

3. Use of non-ferrous metals limited to: (a) High side; (b) Low side; (c) Motor and controls; (d) Refrigerant connections (not over 3/4-inches O.D.); (e) Galvanizing.

4. Use of ferrous metals limited to: (a) High side; (b) Low side; (c) Miscellaneous fittings and hardware; (d) Drains; (e) Thresholds; (f) Ice bunkers; (g) Floors—22 gauge; (h) Wire mesh.

5. Exceptions: Aboard ship for reach-ins; aboard ship and at advanced bases for walk-ins.

6. Permits assembly from fabricated parts in inventory.

7. Effective date: April 6, 1943.

6. Refrigerant and Service Connections

Schedule VI—Refrigerant and Service Connections.

1. Prohibits the use of copper tubing for refrigerant connections ex-

cept for self-contained systems, maximum length of 15 feet for non-self-contained systems; and then only providing the tubing is not larger than 3/4 inches (O.D.).

2. Prohibits the use of copper tubing for service connections.

3. Exceptions: Aboard ship and advanced bases.

4. Effective date: April 6, 1943.

Illinois Locker Plant Increases Capacity

CARMI, Ill.—Frosted Food Lockers here has undergone a remodeling program which included the adding of 200 new lockers, most of which are already rented.

The firm, formerly known as Carmi Locker and Packing Co. is now owned by W. D. Morgan. The plant has been considerably enlarged and a slaughter room provided. Other features include the enclosing of the meat cutting room with glass, installing a smoke room with fully automatic control, and the addition of a new baconizing unit.

PENN ADVERTISES TO SUPPORT THE INDUSTRY

In Fortune, Time and Business Week Penn's consistent advertising supports the refrigeration industry. The full page shown is from Business Week of March 6. This advertising is designed to help you, by emphasizing the vital service of refrigeration and creating in the minds of influential people a proper appreciation of the essential nature of your business.

STAMINA TO FIGHT...AND WORK

In the mess kit...in the lunch box...food builds the sinews of war in our fighting men, provides needed strength to workers. Food furnishes stamina...the staying power which wins Victory!

Food needs refrigeration, to preserve its precious vitamin content, as well as to keep it wholesome and healthful. In storage warehouses and retail stores, on trucks and trains and ships, refrigeration wages its own private war against the bacteria of decay.

One of our important jobs in peace-time is the manufacture of automatic controls for refrigeration equipment—controls which keep temperatures at safe levels for perishables of every kind. Now our facilities for engineering and producing fine precision instru-



ments are being devoted largely to direct work for our armed forces. But we still regard it as one of our important war-time responsibilities to supply the necessary controls for vital refrigeration equipment, under the established priority regulations. Penn Electric Switch Co., Gosben, Indiana.

PENN

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

The Brass Situation As It Affects Refrigeration Activities Today

By Geo. R. Allen, Sales Mgr., Refrigeration Products Div., Mueller Brass Co.*

A year ago I was invited to come to Toronto to talk to you gentlemen about the brass situation as it existed at that time. After I got through talking to you, I felt that I was one of the most unpopular men in the gathering because I could bring you nothing but discouraging news as to the availability of refrigeration parts made out of brass. I am afraid that in coming here today, I am confronted again with the same problem, because while the brass situation has eased off somewhat in the period of the last year, it still has not eased off to the point where brass valves, fittings, etc., are going to be much more readily available.

To understand the situation as it exists today, I believe we should first briefly review the way the supply situation has developed during the last year.

A year ago, we were very definitely short of raw material. Raw material for the brass industry is not only virgin copper, zinc, lead, tin, etc., but also the scrap brasses and bronzes. Today we are not short of material. More copper proportionately is available in the United States due in part to the increased output of our domestic mines and in part to the fact that imported copper is flowing into the country more freely.

*Address given before the convention of Canadian Interprovincial Association of the R.S.E.S. in Toronto, March 15.

You have all witnessed scrap drives during the past year, and these in part, have contributed to increasing the supply of scrap available.

During the last year, however, one of the greatest non-productive requirements of brass was the fact that it was necessary for the brass industry to build up an in-process stock in literally hundreds of new munition plants and aircraft plants, etc.

I believe you gentlemen will realize that if an industry is fabricating ten million pounds of material a month, for example, and they double or triple their output, it becomes necessary for them to increase the amount of material they constantly have in production.

It was a substantial drain on the industry's facilities to fill up the work in process reservoir during the past year.

Some Favorable Factors

The fact that our work in process inventory of the various brass fabricating industries is filled up together with the fact that there is more virgin metal and more scrap available to us, has eased materially the supply situation as far as the industry is concerned.

Briefly, then, that is the background of the situation that faces us today. But even in spite of the fact that more raw material is available, the outlook for an increased output

of brass products for the installation and repair of refrigeration equipment for civilian use is not too bright.

The brass industry is operating today at top capacity. But even at that top capacity, they cannot produce finished brass out of the raw material that is available to us for that purpose.

The tremendous quantities of brass that are required for the war program seem to indicate that the brass industry today after taking care of war requirements will not have a relatively small surplus capacity to take care of the really essential civilian requirements.

In all probability, essential civilian requirements will be taken care of pretty well in the refrigeration industry, but please remember that the refrigeration industry is contributing very heavily of its productive capacity to the war program, and that by far the largest part of its production is entering directly into the war program.

There is one fact about brass products that I would like to bring particularly to your attention. We frequently think of brass and copper as if all forms and shapes of brass and copper were practically one and the same thing. This is not true for some forms and shapes of brass and copper are readily available, whereas other forms of brass and copper are not readily available.

At the moment, there is also a shortage in the capacity to manufacture brass forgings. This is of serious concern to the refrigeration industry since you all know that brass forgings are used in very many applications.

Free turning brass rod is slightly less critical than it was a year ago, but still in certain sizes and shapes,

The Sullivans Visit Automatic Products Co.



Mr. and Mrs. Thomas F. Sullivan, whose five sons were lost when the cruiser Juneau was sunk in the South Pacific, visited the Automatic Products Co. last month in their national tour of war plants. Roy W. Johnson, president of Automatic Products, which is supplying precision torpedo parts to

the Navy, introduced the Sullivans to 600 employees. In the above picture Commander H. Heuber, Genevieve Sullivan, and Mr. and Mrs. Sullivan listen to Earl L. Vallee, vice president and general manager, explain the functions of a testing machine.

production must be limited almost exclusively to war requirements.

Much Copper Tubing Made

I am not familiar with your situation in Canada as far as copper tubing is concerned, but strange as it may seem, in the United States there is relatively abundant capacity for the production of copper tubing.

Here the M-9-c order has had its effect by diverting to steel and other types of tubing. Many applications where formerly copper was considered as the sole piping material. A further factor tending to ease the copper tubing situation is the fact that the type of tubing facilities required for the manufacture of small size copper tubing can not readily be diverted to the manufacture of tubing for shell bands, condenser tubes, etc., which call for such a great tonnage of the average tube mills production.

Now, with your permission, I would like to take another moment or two of your time and carry the story of the brass industry one step further and see what it means as far as the brass fabricating industry is concerned.

Please remember that the average manufacturer of expansion valves, line valves, fittings, dehydrators, etc., obtain large quantities of material from the brass industry. When the fabricator is held up because of the fact he is not able to obtain brass forgings, or because he cannot obtain free turning brass rod, please don't place the blame on him.

Instead, please realize that this manufacturer is doing everything he possibly can to get raw material from an overloaded mill, and if the mill cannot furnish him the rod, the forgings, that he will not be able to furnish you finished products as quickly as you would like to have them, or as quickly as he would like to deliver them to you.

So for a change, blame the brass mill instead of your manufacturing source.

There is a further factor that complicates the manufacturer's situation today. Certain materials are so very difficult to obtain that frequently a manufacturer will find that in an assembly that uses for example, 50 parts, he has all of the material required for 40 of the parts but he cannot obtain the different material required for the other 10 parts.

A manufacturer of fittings has further complications. We will receive an order from one of you through a jobber, for example, that may call for 35 or 40 different fittings. Of this number of fittings, maybe 25 or 30 are in stock and are shipped immediately. On the others, which you need badly to complete your installation, there may be at times a delivery promise which is very difficult for you to explain to your customer, or for anybody else to explain to your satisfaction.

But the fact remains that the screw machine that the manufacturer needs to manufacture some of the fittings that are back ordered maybe tied up on a long running munitions contract, and he may not have that machine available to run fittings for the refrigeration industry for several weeks or even several months. Or maybe it is an elbow or tee where he may have machine capacity available, but

here again, is held up in obtaining brass forgings.

I do not believe there is any manufacturer represented here today that knows just what he is going to be able to do under the Controlled Materials Plan because none of them, to the best of my knowledge, has yet received allotments of material for the second quarter. Until the manufacturer has actually received allotments from the War Production Board, it is going to be difficult for us to tell with any degree of accuracy, what we will be able to do.

Possibilities Under CMP

It is quite possible that only sufficient material will be allotted to the refrigeration industry to cover production of equipment for the Armed Forces. If our allotments are unduly restricted, it will mean that the production capacity of the Brass Mill and the Steel Mill is being diverted more to other products and a smaller quantity of refrigeration equipment will be available accordingly.

Of the smaller quantity that would be available, under restricted allotment, a much larger proportion would be given to the Army and Navy because of the fact that in general, their orders carry top priority.

Under CMP, however, we do hope there will be more certainty because a manufacturer theoretically is guaranteed that he can obtain the quantity of material that he is allotted. This was not true under PRP.

Under the Production Requirements Plan, many manufacturers received an authorization to purchase a sufficiently large quantity of material, but were unable to find a source of supply who could furnish material to the quantity that was authorized.

Under CMP, the War Production Board guarantees the manufacturer that if he cannot find a source of supply for his mill products, the War Production Board will find a mill that can make them for him.

There is just one brief word I would like to say on behalf of the Valve and Fittings Industry before I close. Within the next few days, there will be a standardization order issued by the War Production Board in Washington, which will be known as Schedule 4 to Limitation Order L-126.

This proposed order will force the fittings manufacturer to discontinue the manufacture of about 60% of the sizes that they now list in their catalog. This will not be of serious consequence however, since there will be a sufficient range of sizes still available even under standardization to take care of all of your normal piping requirements.

Much the same standardization will be effected as far as packless line valves, packed line valves, dehydrators, filters, and other such installation accessories are concerned. You will still be able to obtain them, but you will only be able to obtain them in the standardized sizes and designs that has been adopted by the WPB.

As far as valves and fittings are concerned, this should ease your problem since the manufacturer is going to be able to concentrate his production facilities on fewer sizes and pipes and in this way, it is hoped that material will be more readily available for order.

THE MARLO FIN-TO-TUBE BOND INSURES THERMAL TRANSFER

A HEAT transfer surface is no better than the bond between fins and tubes. Marlo tubes are rolled to their fins by expanding them under extreme pressure. The result: a most efficient thermal and mechanical bond with greater flexing resistance.

MARLO BLOWER TYPE AIR UNITS

Evaporative Condensers and Coolers • Air Conditioning Units • Industrial Coolers

"MARLO MEANS HEAT TRANSFER EQUIPMENT"

MARLO COIL COMPANY
ST. LOUIS, MISSOURI

Outline of the Effect of Revised L-38 on Refrigeration Items

The outline published below is from an official source and indicates in concise form how the various items of commercial refrigeration equipment are affected by revised Limitation Order L-38. The "see*" notation is explained in a line at the bottom of the tabulation. Readers are warned that this outline is not a substitute for a thorough reading of the revised L-38, however.

Conditions of Production & Delivery Under L-38

Equipment	Production	Delivery	End Use	Special Conditions
1. New "Systems" (excluding items 5 and 9 to 45 inclusive)	Note 1	Note 2	List C	Note 3
2. New Parts (excluding parts for emergency repair service)	Note 1	Note 2	List C	.....
3. Replacement Parts (except for comfort cooling)	Note 4	Note 5	Emergency Repair Service	.....
4. Replacement Parts (for comfort cooling)	Note 4	Note 6	Note 7	.....
5. "Farm Milk Coolers"	Order L-170	Rationing	Farm	Note 8
6. "Industrial Type Extended Surface Heating Equipment"	Note 1	Note 2	List C	.....
7. "Industrial Type Humidifying Equipment"	Note 1	Note 2	List C	.....
8. Used High Side, Compressor, Turbo Blower, Condenser, Low Side, or Evaporator, rated at 3 hp. or over	.....	Note 2	List C	.....
9. Reach-in Refrigerators	Note 1 (See *)	Note 2	List C	Note 9
10. Walk-in Refrigerators	Note 1 (See *)	Note 2	List C	Note 9
11. Beer pre-coolers	None	Unrestrict'd	.....	Note 10
12. Beverage Dispensers	None	Unrestrict'd	.....	Note 10
13. Bottled Beverage Coolers, Mechanical	None	Unrestrict'd	.....	Note 10
14. Bottled Beverage Coolers, Non-Mechanical	None	Unrestrict'd	.....	Note 10
15. Counter & Back Bar Refrigerators	None	Unrestrict'd	.....	Note 10
16. Display Cases, Single Duty	None	Unrestrict'd	.....	Note 10 & 11
17. Display Cases, Double Duty	None	Unrestrict'd	.....	Note 10 & 11
18. Display Cases, Florist	None	Unrestrict'd	.....	Note 10
19. Display Cases, Frosted Foods	None	Unrestrict'd	.....	Note 10
20. Display Cases, Full Vision	None	Unrestrict'd	.....	Note 10
21. Display Cases, Vegetable	None	Unrestrict'd	.....	Note 10
22. Display Cases, All Other Types	None	Unrestrict'd	.....	Note 10
23. Dough Retarding Refrigerators	None	Unrestrict'd	.....	Note 10
24. Draft Beer Equipment	None	Unrestrict'd	.....	Note 10
25. Evaporative Coolers, 2,000 c.f.m. or less	None	Unrestrict'd	.....	.....
26. Farm Freezers	None	Unrestrict'd	.....	Note 10
27. Florist Boxes	None	Unrestrict'd	.....	Note 10
28. Fountainettes	None	Unrestrict'd	.....	Note 10
29. Frozen Food Cabinets not for use aboard ship & not for use in mobile hospital units	None	Unrestrict'd	.....	Note 10
30. Ice Cream Cabinets, not designed for use aboard ship	None	Unrestrict'd	.....	Note 10
31. Ice Cube Makers, Self-Contained Cabinet Type	None	Unrestrict'd	.....	Note 10
32. Salad Coolers, Mechanical	None	Unrestrict'd	.....	Note 10
33. Soda Fountains, not designed for use aboard ship	None	Unrestrict'd	.....	Note 10
34. Drinking Water Coolers, Mechanical, designed for use aboard ship	None	Army or Navy	.....	Note 12
35. Drinking Water Coolers, Mechanical, designed for use aboard ship	Note 1 (See *)	(See *)	Aboard Ship	.....
36. Drinking Water Coolers, Non-Mechanical, all sizes	None	On Authorized Order	.....	Note 12
37. Evaporative Coolers, over 2,000 c.f.m.	Note 1 For: Army or Navy	Army or Navy on Authorized Order	.....	.....
38. Ice Cream Freezers, 20 qt. capacity or less	Note 1 For: Army or Navy	Army or Navy on Authorized Order	Aboard ship Advanced Bases	.....
39. Mortuary Refrigerators	Note 1 For: Army or Navy	Army or Navy on Authorized Order	.....	.....
40. Portable Bulk Ice Makers	Note 1 For: Army or Navy	Army or Navy on Authorized Order	.....	.....
41. Self-Contained Unit Air Conditioners, 2 hp. or less	None	On Authorized Order	.....	.....
42. Wall Type Display Case	None	On Authorized Order	.....	.....
43. Frozen Food Cabinets, designed for use aboard ship or for use in mobile hospital units	Note 1 (See *)	(See *)	Aboard ship & Mobile Hospital Units	.....
44. Soda Fountains, designed for use aboard ship	Note 1 (See *)	(See *)	Aboard ship	.....
45. Ice Cream Cabinets, designed for use aboard ship	Note 1 (See *)	(See *)	Aboard ship	.....

(*) For: Army, Navy, Maritime Comm., War Shipping Adminis.

Key to "Notes" That Appear in the Outline of L-38

Note 1

Production restricted to either the number of such new items for which a producer has unfilled orders bearing a rating of AA-4 or higher or the number of such new items delivered on orders bearing a preference rating of A-1-J, or higher, during the preceding calendar quarter.

Note 2

To be delivered only on an "authorized order" or for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration. To obtain an "authorized order" application shall be made to the War Production Board on Form PD-830 if equipment is industrial refrigeration or air conditioning equipment and on Form PD-831 if equipment is small commercial refrigeration equipment and machinery such as commercial refrigerators. The filing of such application shall relieve the applicant from the necessity of filing an application form for any component part required by Orders L-100, L-163, or L-172. If system is part of construction work (under L-41) include in PD-830 or 831 only materials necessary to install the system.

Note 3

The production of compressors or turbo blowers rated at 50 h.p. or larger is restricted to unfilled "authorized orders" for such equipment.

Note 4

The production of replacement parts is limited to such quantities that will not be in excess of a producer's average monthly inventory of similar parts during the months of January, February and March, 1941. The production of replacement parts may be scheduled as if the orders therefor bore a rating of AA-1.

Note 5

The delivery of parts for "emergency repair service" is restricted (a) for use in "emergency repair service" and to fill an order bearing a rating of AA-4 or higher, or (b) to fill an "authorized order," or (c) for direct use by the Army, Navy, Maritime

Commission, or War Shipping Administration.

Notes 6 and 7

The delivery of new or used parts for the repair of "comfort cooling systems" is prohibited except under one of the following conditions:

(a) To fill an order bearing a preference rating of AA-4 or higher providing the sales value of the part or parts does not exceed \$25 for systems 20 h.p. or less, \$50 for systems 20 to 100 h.p., and \$100 for systems over 100 h.p. The owner or user of a "comfort cooling system" may apply to his local WPB office for such a preference rating.

(b) To fill an "authorized order" if the value of the part or parts is more than in (a) above. No such order will be authorized unless it is demonstrated to the satisfaction of the Director General for Operations that the continued operation of such "comfort cooling system" is essential to avoid air conditions which would be actually intolerable or dangerous to health.

Note 8

The refrigerating system for a "farm milk cooler" may be obtained by the manufacturer of such coolers only on an "authorized order." The subsequent delivery of the completed coolers is not restricted by the order.

Note 9

Reach-in and walk-in refrigerators for civilian use may only be produced from parts or materials owned by the producer on April 6, 1943. One producer may sell such parts or materials to another producer.

Note 10

Any new or used parts acquired prior to May 15, 1942, for use with this equipment may be delivered unrestricted, except a condensing unit rated at more than 1/4 h.p. and designed for remote installations.

Note 11

Single duty and double duty display cases may be assembled, from fabricated parts on hand, during a

period of 60 days beginning April 6, 1943.

Note 12

Drinking water coolers, mechanical or non-mechanical, may be assembled from fabricated parts on hand as of April 6, 1943, and such parts may be delivered by any producer to another producer.

MISCELLANEOUS

(a) Report of orders received from Army, Navy, Maritime Commission, or War Shipping Administration. On or before April 10th and on or before the 10th of each succeeding calendar month, every producer must file with the WPB a letter, in triplicate, showing all orders accepted by him during the preceding calendar month for any new system, high side, compressor, turbo blower, condenser, insulated enclosure, low side, evaporator, "industrial type extended surface heating equipment," or "industrial type humidifying equipment," to be delivered to and for the direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

(b) Report of idle inventories. On or before April 15, 1943, every producer shall file on Form PD-829 a report of inventories of specific equipment as required by this form.

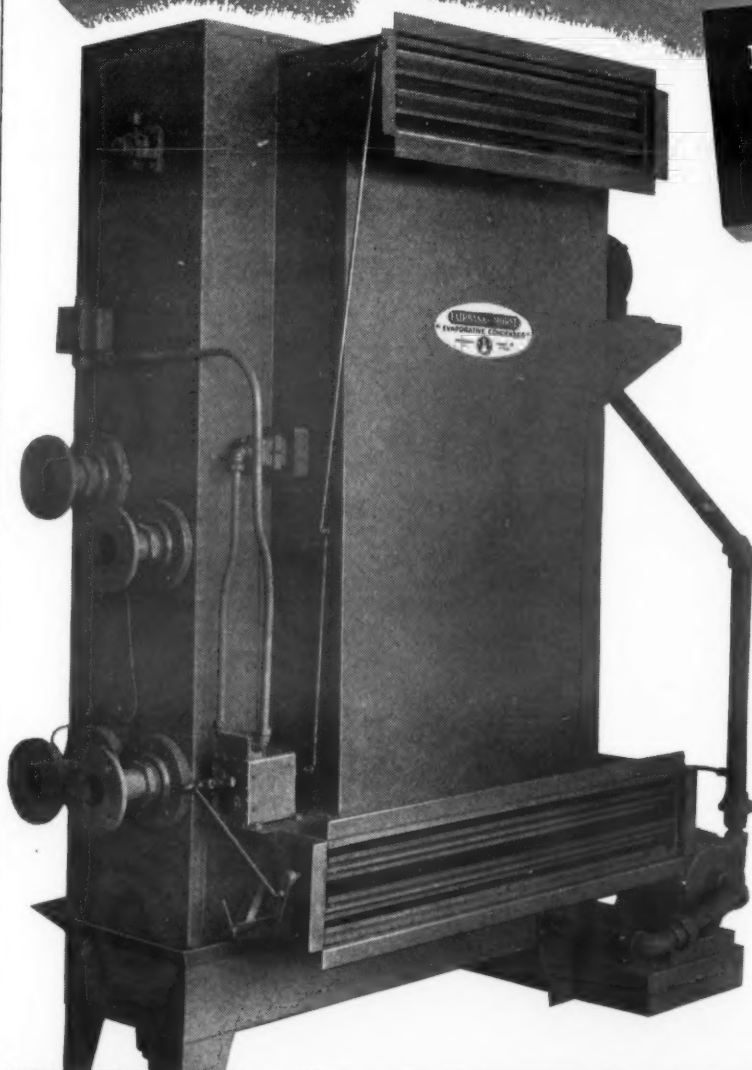
(c) Disposition of replaced parts. All replaced parts made of metal must be delivered by the owner to the dealer or producer, if required, or disposed of to a scrap dealer within 30 days. This does not apply to parts delivered outside the continental United States or used directly by the Armed Services. Replaced parts obtained by a dealer or producer must be repaired, or returned to his supplier of new parts, or scrapped.

(d) Rental water coolers. Rental water cooler companies may deliver new or used drinking water coolers unrestricted that were owned by them on May 15, 1942.

(e) Appeals. Appeals granted under this order will also include the granting of any applicable appeal from M-9-c or M-126.

Wartime Needs Make Wartime Sales

Meet one of today's greatest needs with the Fairbanks-Morse Evaporative Cooler



TAKE quenching oil as just one example—Accelerated war production makes it imperative that the quenching bath be held at the desired temperature—right on the nose!

Wherever that problem exists—and it exists in plenty of plants—there is a need for the Fairbanks-Morse Evaporative Cooler.

Designed to cool oil, water, or other liquids, the F-M Evaporative Cooler eliminates many of the troubles associated with conventional direct-cooling systems:

- it provides positive, automatic control of the temperature in the quenching tank regardless of load or atmospheric conditions.
- it solves the problem of scarcity and cost of water because it uses only two pounds to dissipate 1000 B.T.U. of heat.
- it is simple, complete, sturdy, compact, and easy to install.
- and it is available in a range of 24 sizes with capacities up to 11,000,000 B.T.U. per hour at 170 degrees F. mean fluid temperature or 2,100,000 B.T.U. per hour at 100 degrees F. mean temperature.

Get complete details of this and other Fairbanks-Morse Air Conditioning and Refrigeration Equipment. Wartime needs can make wartime sales for you—too. Phone—write—wire. Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago. Branches and service stations throughout the United States and Canada.

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'Deep-Freeze' Boom & Ice Cream Cabinets

PHENOMENON of the current civilian refrigeration market is the almost frantic demand for "Deep-Freeze" units or any reasonable facsimile thereof. By midwinter the supply of low-temperature food storage cabinets had been practically exhausted. Buyers then turned to rehabilitated ice cream cabinets.

They are still crying for them. Rehabilitating old ice cream cabinets and selling them to eager food hoarders has become the bonanza of the times.

UNEXPECTED SOURCE OF SUPPLY

Fortunately for the trade this wild-eyed demand for low-temperature cabinets has coincided with a time when a surplus of used ice cream cabinets was on hand.

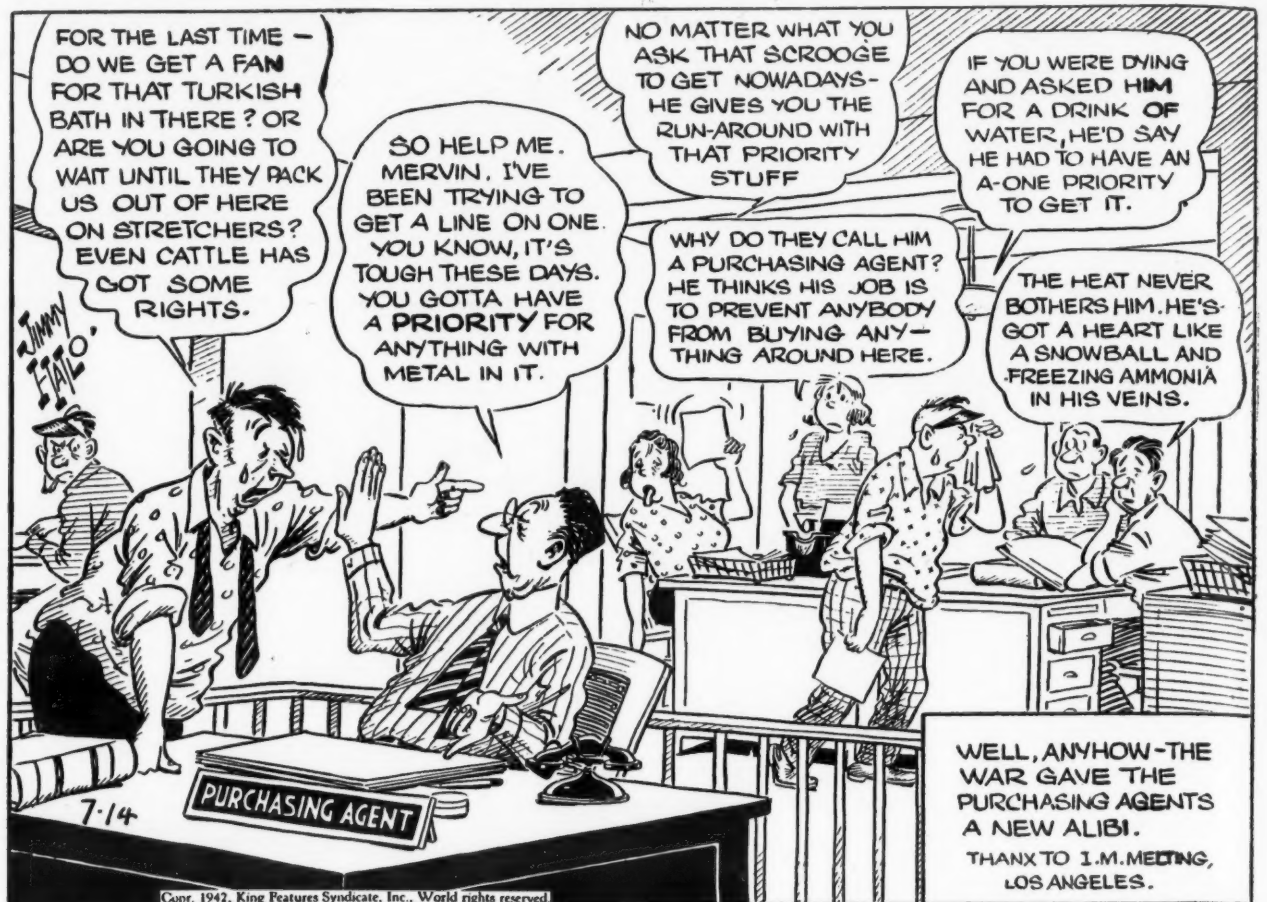
Following the curtailment of ice cream production last summer, and the increased difficulties of delivery service, dairies which formerly rented or lent ice cream cabinets to any hole-in-the-wall which would sell their brand of ice cream began recalling these units. These then became available to enterprising refrigerator dealers and service men.

Also, individual owners of ice cream cabinets in roadside eateries and spots forced to close because of gasoline rationing threw their equipment on the market. This also was grabbed by the opportunists who saw the rising demand for low-temperature cabinets for home storage.

These cabinets have obtained premium prices. They are treasured by their owners. Possession of a "Deep-Freeze" (which has become a generic term applied as indiscriminately as "Frigidaire") is now a badge of distinction, worth bragging about.

Not only have these units been purchased for the storage of meats, but people plan to store produce from their

They'll Do It Every Time By Jimmy Hatlo



Victory gardens in them. Information on methods of quick-freezing vegetables is being sought from this office almost every day.

Outside of syphoning off some excess purchasing power, adding to the nation's food storage facilities, and helping hundreds of hard-pressed dealers stay in business a little while longer by providing them temporarily with high profits and fast turnover, this "Deep-Freeze" boom has other values.

It has helped dramatize to the public the importance of refrigeration.

Low-temperature cabinets for homes, which moved very sluggishly until the war came along, are now "in." They are prominently on the list of postwar wants of thousands of families. The market for these jobs has been built almost overnight—saving probably three or four years of "education" which would have been required in normal times.

NEW RESPECT FOR REFRIGERATION

This interest in low-temperature cabinets has also given owners of ordinary household refrigerators new respect for their old refrigerators. Millions probably have a steak or two frozen in the ice cube compartments of their household refrigerators—a use which may never before have occurred to them.

Consumption of quick-frozen foods is moving to new highs as people learn that ration points for these top-quality foods are lower than for equivalent (but lesser quality) canned goods. And supplies of quick-frozen foods will reach an all-time high this year.

It all adds up to a great shot-in-the-arm for postwar household refrigeration prospects. The refrigerator is no longer just a nice thing to have in the kitchen, handy for frozen desserts, ice cubes, and keeping milk for the kids. It has now become an important adjunct to daily lives.

People are learning how to use their refrigerators, what to put in them, where to place each type of food, how to get the utmost out of each treasured refrigerator.

And this awakened appreciation of refrigeration as a necessary part of our living will increase as the war continues and food becomes scarcer and scarcer.

Civilian Supply Needs a Champion

CONGRESS is now considering the Maloney Bill, which would set up an independent Office of Civilian Supply with powers as a claimant agency on manpower and materials equal—or almost equal—to those of the Army, Navy, Lend-Lease, Board of Economic Warfare, etc.

Two Detroit refrigeration men—Geo. L. Johnston and Charles Edwards, went down to Washington last week to testify in favor of this bill. Joseph Weiner, head of the War Production Board's Office of Civilian Supply, has also testified cogently in favor of the bill, and his soundly conceived testimony is published on page 7 of this issue. We recommend it to your careful perusal.

This industry has certainly been aware of the need for some one agency to champion the needs of the civilian populace. Refrigeration products and service are in great demand by the armed forces and war plants—in such great demand that the available facilities for production and servicing of refrigeration equipment have largely been preempted by the military establishments.

As a result everyone in the industry is fully employed and reasonably prosperous—but worried half to death. The worry is over the plight of civilian refrigeration facilities, which are becoming less and less adequate with the passage of every month; and which threaten to break down disastrously in many quarters eventually if more attention isn't paid to their upkeep and replacement.

Our first responsibility as an industry is to help win the war, which we are doing to our utmost—and with considerable ingenuity, too, as the record will testify. But we also have a major responsibility to the civilians of this country, who have come to depend on us to keep the perishable foods America eats from spoiling.

An agency which could battle for adequate refrigeration for our homes, which could look the Army or Navy in the eye and say: "Prove that you need all that equipment" might be a great help.

Hoarding of needed supplies—not only by the armed forces, but by Lend-Lease, BEW, and other agencies

—could be checked by an independent Office of Civilian Supply which knew its business. WPB now has an Office of Civilian Supply which knows its business, but which has no power.

Inasmuch as we now have in the News audience a "constituency" which has become Congress-conscious, and which knows how to write letters to Congress, it seems to us that here is an issue in which our subscribers can go to town.

'LET CONGRESS KNOW FACTS ON REFRIGERATOR STOCKPILE'

LOFGREN'S
D. S. Stophlet, Prop.
Moline, Ill.

Editor:

Your article with the letters from Mr. Danforth, Senator Davis, and Mr. Felt is entirely "on the beam."

I think that you could perform a great service to the industry in starting a campaign to bring these facts to every Senator and Congressman.

There is no doubt that Congress has its ears "close to the ground," especially since the last election.

My idea is simple. A chain postal card campaign participated in by all members of the Appliance Industry and directed to their Senators and Congressmen. Let them know the facts about the release of the refrigerators—suggest the use of these on housing projects but emphasize the fact that millions of patriotic Americans, many of them ex-service men of World War I with sons in the service now, feel that a sensible program should be worked out to put these idle mechanical refrigerators to work.

We in the industry know that unless prompt action is taken there is going to be a terrible slump in civilian morale this spring and summer and when the food begins to spoil, and there are no replacement refrigerators. These idle stocks should be doing their part in the war effort in war workers' kitchens preserving precious food.

All should be released on a ration basis to war workers and moderately limited production started to take care of housing and necessary military requirements.

Please start a "Write Your Congressman" campaign to bring these facts home to your elected representatives.

Donald S. Stophlet

Answer: Nearly 150,000 mechanical refrigerators have just been released from the nation's "frozen" stockpile. See AIR CONDITIONING & REFRIGERATION NEWS Bulletin Issue of April 5.

INCORRECT CAPACITY GIVEN ON WARD V-5 MODEL

Ward Refrigerator & Mfg. Co.
6501 South Alameda St.
Los Angeles, Calif.

Editor:

I note in your March 22 issue you show table of pricing formula for iceboxes of permitted manufacture, in which you show our V-5 as of 4.21 cubic feet food storage capacity. This is incorrect and should read 5.2, and we will appreciate your making note of this correction.

Dwight A. Ward

Conditioning of Cotton Cord For Tires Requires Exact Humidity Control

Fabric Division of Plant Sealed Against Atmosphere

AKRON, Ohio—Important factors in conditioning cotton cord and forming it in a sheet for automobile tires are maintaining proper humidity in the conditioning and creel rooms and operating at almost constant temperature.

The B. F. Goodrich Co., Akron, pioneer tire manufacturer in the United States and maker of the Silvertown tires, uses vast quantities of cotton cord for tire fabric. More than 60% of all the cord used in B. F. Goodrich tires is spun in the company's own cotton mills in Silver-town, Ga.

Car loads of cord in cones of 11½ pounds each are shipped to the main B. F. Goodrich plant in Akron where they are unloaded and placed in warehouses until ready for use. Then they are unwrapped and placed in the creel room under proper humidity and temperature to give the proper moisture content. After 24 hours the cones are placed in the creel from which the cord is run into a sheet of wetless fabric from which tires are made.

Throughout the creel process the cord must maintain a uniform moisture condition. If the relative humidity becomes too high, the cord becomes lively and it is difficult to wind off without catching on other cones or parts of the creel, thus causing many "broken ends" to occur.

If the humidity is too low, the cord loses some of its adhesiveness and has a tendency to drop from the cone as unwound, thus breaking, resulting in delay and uneven creel fabric.

The precision with which the operations must be executed is indicated by the fact that hundreds of cords constantly speed into each creel to make a single strip of fabric.

The creel rooms of the B. F. Goodrich plant are kept at a definite temperature and relative humidity. This is accomplished with practically no variation by two Carrier humidifying systems.

These are located adjacent to the fabric rooms where both air from outdoor and air from the fabric rooms may be drawn through the intake ducts. After passing through a series of water sprays, the air, for humidifying the air is brought to the proper temperature by passing through a series of finned steam pipes.

Ducts carry the air throughout the parts of the factory where it is needed and a spray system augments the humidifiers if added moisture is desired in any part of the rooms.

From the creels the fabric constantly moves into the calendaring rooms, where it is coated on both sides simultaneously with rubber compound. This is squeezed and wiped into the fabric meshes by passing between large steel rolls.

The fabric, now frictioned, is rolled up in a cotton liner properly treated to prevent the gum from sticking and is sent to the cutting rooms where it is tailored into proper sizes and

shapes for use in making tires.

Testing of cord and fabric is important. The B. F. Goodrich Co., realizing the value of this phase of tire manufacture, placed its fabric testing laboratory in the same building as its creel rooms so that the cord, even in test, is under the same atmospheric conditions as when drawn from the cones.

To retain even temperature and proper humidity, the fabric division of the B. F. Goodrich factory is sealed against the outside atmosphere. All offices and laboratories as well as the creel rooms are served by Carrier equipment.

G. A. Dornheim and M. S. Smith Step Up With Buensod-Stacey

NEW YORK CITY—M. S. Smith, former general manager of Buensod-Stacey Air Conditioning, Inc., has been elected vice president and treasurer, A. C. Buensod, president, has announced.

Another vice president, elected at the same time, is G. A. Dornheim who previously had been in charge of process piping and the installation of boiler plants for the company. J. A. Lochran, assistant secretary.

W. J. McDonald, former treasurer, resigned to become a Lieutenant, U.S. Naval Reserve.

Twenty men from Buensod-Stacey have gone into the armed forces, among these being Capt. A. E. Stacey, Jr., U.S.N.R., former vice president.

John Sargent Named To Westinghouse Post In Marketing Work

EAST PITTSBURGH, Pa.—John R. Sargent has been named acting manager of the market development department of Westinghouse Electric & Mfg. Co. He was formerly the company's eastern district market development representative and succeeds Donald C. Hooper, who is on active duty in the U. S. Navy.

From 1934 to 1937 Mr. Sargent was employed with the Industrial Research and Development Bureau of the Philadelphia Chamber of Commerce. He then moved to the Smith, Kline & French Laboratories in Philadelphia, where he engaged in market research activities from 1937 to 1940. Mr. Sargent came with Westinghouse in 1940.

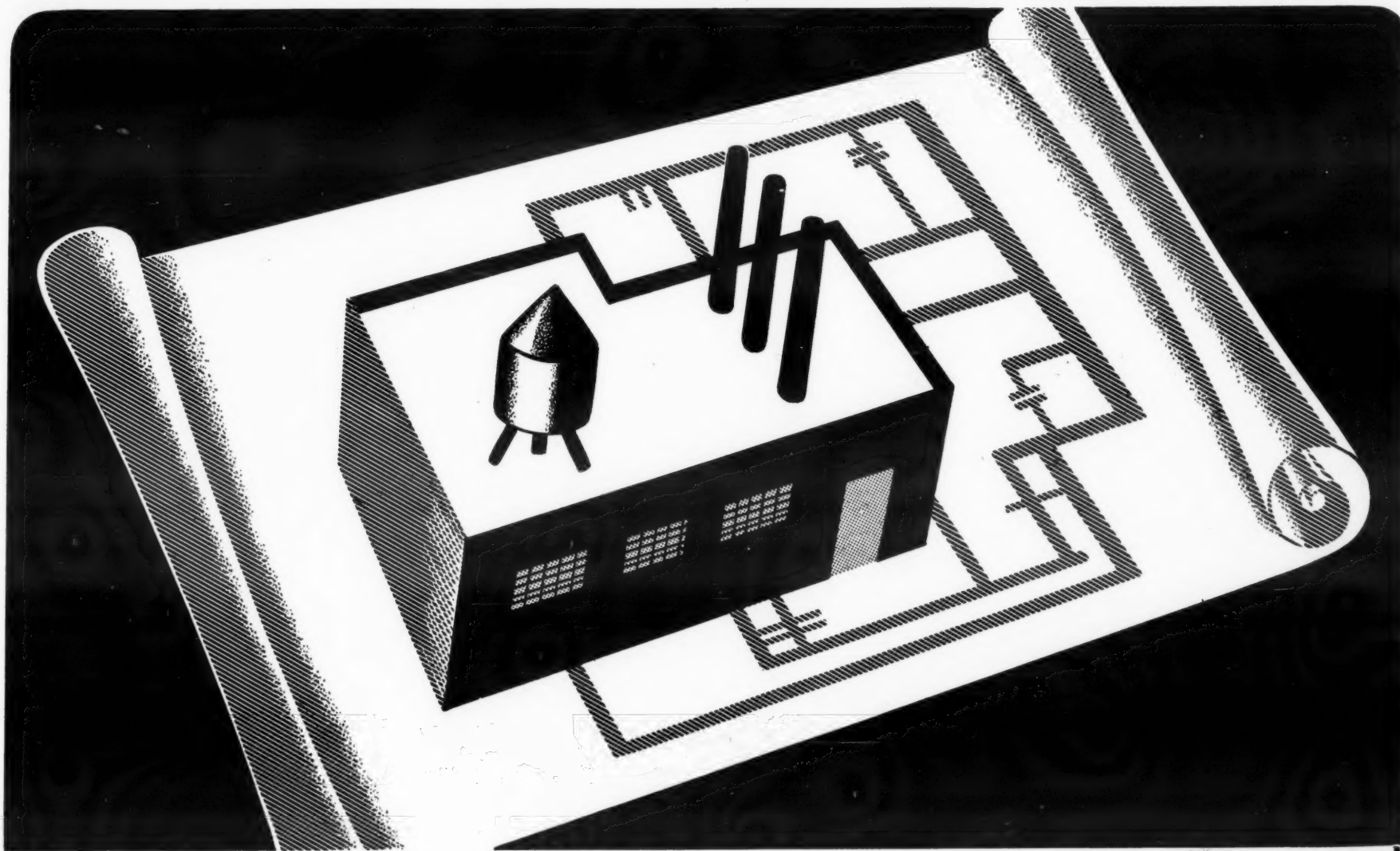
Stoves Now Available To Others Than Homeowners On Rationing Basis

NEW YORK CITY—Coal-burning stove ration certificates will be available to persons other than home owners, OPA announced recently.

By permission of the amended OPA order, such institutions as hospitals, clinics, industries, and others are now allowed to purchase stoves to supplement oil-burning equipment, providing they can find them.

However, the order stipulates that if such an institution disposed of any heating unit within the last 60 days it will not be eligible for a stove.

Representatives of the industry were unanimous in the statement that, "The order won't mean a thing unless the stove industry is permitted to build up stocks during the summer."



FUTURE EXPANSION...



Did it ever occur to you that your business career is like a manufacturing plant? Your experience is the foundation. Your sales ability provides the walls. Your contacts constitute the roof. And your initiative and ambition determine the output.

But, like every manufacturing plant, your business career can't expand over night. Expansion requires planning... blue prints.

NOW is the time to plan the future expansion of your business career... to draw the blue prints which will guide your development when the war is won. Don't try to do it yourself. You'll need an architect... the best.

And what do you look for in selecting the architect for your business career? The very things that must be incorporated in that career itself!

EXPERIENCE... Is your career architect broadening his activities in your field and capitalizing on these activities with research?

SALES ABILITY... Has your career architect proved his ability to increase your sales by increasing his own... in regular lines?

CONTACTS... Can your career architect provide you with new lines for new customers in new fields... and is he getting this kind of business now to prove it?

Well... there you have it. Tie up with this kind of architect and foundation, walls and roof of your post-war plant are taken care of... a plant that will turn out a business career for you that will make your eyes pop,

PENGUIN PETE

P. S. Think my blue print is not blue enough, eh? Forget it, buddy... you've been wearing dark glasses.

BUSH MANUFACTURING CO.
Commercial Cooling Units

HARTFORD CONN. • 415 LEXINGTON AVENUE NEW YORK • 549 W. WASHINGTON BLVD. CHICAGO

Stewart-Warner's Sales Up 65%, Profit Down 4%

CHICAGO—Stewart-Warner Corp. and subsidiaries in its annual report to stockholders for the year ending Dec. 31 shows an increase in sales of 65% over 1941 and a decrease of 4% in net profits. Gross sales for 1942 were \$88,913,625 compared with 1941 sales of \$53,933,908.

Net profit after all deductions including a "provision for postwar plant rehabilitation and for contingencies arising out of war conditions" of \$2,000,000, was reported at \$1,590,454. The 1941 profit was \$1,656,680.

Earnings per share for 1942 were equal to \$1.25 for the 1,272,920 shares of common stock outstanding and, as in 1941, two dividends of 25 cents each were paid.

James S. Knowlson, president and chairman of the board of Stewart-Warner Corp., in his letter to the stockholders, calls attention to the company's rapid conversion to complete war production. "During 1942," he writes, "our first full year of war production, your company produced more goods than in any previous year of its history."

New Maximum Prices For All Used Mechanical Refrigerators Under Revised Price Order 139

Many Model Prices Changed In New Schedule

Complete Text of Revised Order 139

(Document No. 12728)

Part 139—Household and Service Industry Machines (Rev. MPE 139) Used Household Mechanical Refrigerators

Maximum Price Regulation No. 139 is amended to read as set forth below:

In the judgment of the Price Administrator, the maximum prices established by this revision of Maximum Price Regulation No. 139 are and will be generally fair and equitable and will effectuate the purposes of the Emergency Price Control Act of 1942, as amended, and Executive Order No. 9250. A statement of the considerations involved in the issuance of this regulation has been issued simultaneously herewith and has been filed with the Division of the Federal Register.

§ 139.201 Maximum Prices for used household refrigerators. Under the authority vested in the Price Administrator by the Emergency Price Control Act of 1942, as amended, and Executive Order No. 9250, Revised Maximum Price Regulation No. 139 (Used Household Mechanical Refrigerators), which is annexed hereto and made a part hereof, is hereby issued.

Revised Maximum Price Regulation 139—Used Household Mechanical Refrigerators. Section 1. Sales and rentals of used household mechanical refrigerators at higher than maximum prices prohibited.

(a) Regardless of any contract or other obligation, no person shall sell, rent, or deliver a used household mechanical refrigerator to any other person at prices or rates higher than the maximum prices or rates fixed by this regulation, and no person shall agree, offer or attempt to do any of these things.

(b) Prices or rates lower than the maximum prices or rates may be charged.

Section 2. To what products, transactions and persons this regulation applies—
(a) What products are covered by the regulation. This regulation covers sales and rentals of all household mechanical refrigerators which have ever been used, or which have been in the possession of a consumer for more than five days or were manufactured for use in the year 1940 or earlier.

(b) What transactions are covered by this regulation. This regulation covers all sales and rentals of used household mechanical refrigerators by any person to any other person, including sales by an individual who is selling his own refrigerator, and sales by a foreign seller to any domestic buyer. This exception includes domestic buyers who purchase through a bona fide agent.

(c) What persons are covered by this regulation. This regulation applies to any person who sells or rents a used household mechanical refrigerator except foreign sellers and domestic buyers, insofar as they purchase from the foreign sellers. The term "person" includes: An individual, corporation, or any other organized group; their legal successors or representatives; the United States, or any government, or

any of its political subdivisions; or any agency of the foregoing.

Section 3. Maximum prices for sales of used household mechanical refrigerators by all persons—(a) Reconditioned refrigerators. As used in the table below a refrigerator is reconditioned if it meets the following standards:

(1) The refrigerator is capable of continuously maintaining, with normal cycling, an average interior cabinet temperature in the food storage space not exceeding 50° F., under no-load conditions, when placed in a room in which the temperature is 90° F.

(2) All cooling units, compressors, condensers, motors and controls, where such parts are exposed to the accumulation of dust, as well as all shelves, hardware and machine compartments, are thoroughly cleaned, and function properly. Belts on open-type units must be free from frays and splits.

(3) A defrosting tray large enough to catch all drip from the cooling unit, and a minimum of two corrosion-resistant ice cube trays with grids are provided.

(4) Cabinet exteriors, finished with either synthetic enamel or lacquer have all metal completely covered and free from chips, stains, scratches, blisters and other blemishes. Any such defects have been buffed, smoothed, filled, and either spot-sprayed, or the entire exterior re-sprayed, where one of these methods is necessary in order to obtain a finish similar to the original finish. Cabinet exteriors and interiors finished with porcelain are thoroughly cleaned, rust removed from any chips and patched with a suitable porcelain cement.

(b) "As is" refrigerators. An "as is" refrigerator is one which does not meet the standards of a reconditioned refrigerator.

(c) Guaranties. Every refrigerator which is sold as a reconditioned refrigerator must carry a written guaranty for at least 90 days from the date of its installation which provides that any part which proves defective within the guaranty period will be replaced without charge for labor or materials or other services. If the guaranty is to last for one year or more the higher reconditioned price appearing in the table of prices may be charged.

(d) Table of maximum prices for certain used household mechanical refrigerators. The maximum cash price for the following

specified models of used household mechanical refrigerators (except those with factory rebuilt units) shall be:

APEX
If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	454	\$10.50	\$48.00
	504	10.50	48.00
	454-P	10.50	48.00
	504-P	10.50	48.00
1932-3	L-410	12.00	49.50
	L-610	12.00	49.50
	L-800	12.00	49.50
	P-600	12.00	49.50
	P-800	12.00	49.50
1934	SSL-4	15.00	52.50
	SSL-45	15.00	52.50
	SSL-6	16.50	54.00
	SSL-7	16.50	54.00
	DTL-8	19.50	57.00
1935	740	19.50	57.00
	745	21.00	58.50
	760	22.50	60.00
	SSL-6	16.50	54.00
	DTL-6	16.50	54.00
	SSL-7	16.50	54.00
	DTL-7	19.50	57.00
	DTL-8	19.50	57.00
1936	A-430	22.50	60.00
	A-600	24.00	61.50
	A-650	24.00	61.50
	A-785	27.00	64.50
	B-410	27.00	64.50
	B-625	30.00	67.50
	B-655	30.00	67.50
	B-800	33.00	70.50
1937	SC-300	31.50	69.00
	SC-400	34.50	72.00
	SC-600	37.50	75.00
	C-525	39.00	76.50
	C-625	42.00	79.50
	C-710	43.50	81.00
	C-800	48.00	85.50
	AC-610	49.50	87.00
	AC-710	54.00	91.50
	DC-1	55.50	93.00
	DC-2	61.50	99.00
	DC-3	69.00	106.50
1939	D-530	49.50	66.00
	D-620	49.50	66.00
1940	E-51	48.00	64.50
	E-52	52.50	69.00
	E-52-1	52.50	69.00
	E-65	60.00	76.50
	E-65-1	63.00	79.50
	E-66	66.00	82.50
	E-66-1	70.50	87.00
	E-66-2	75.00	91.50

COLDSPOT
If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	240-C	\$12.00	\$49.50
	245-C	12.00	49.50
	255-C	12.00	49.50
	275-C	12.00	49.50
1932	440-C	12.00	49.50
	440-CP	12.00	49.50
	450-C	12.00	49.50
	450-CP	12.00	49.50
	460-C	13.50	51.00
	460-CP	13.50	51.00
	470-C	13.50	51.00
	470-CP	13.50	51.00
	480-CP	15.00	52.50
1933	540-C	15.00	52.50
	640-C	13.50	51.00
	740-CP	13.50	51.00
	440-C	12.00	49.50
	440-CP	12.00	49.50
	450-C	12.00	49.50
	450-CP	12.00	49.50
	460-C	13.50	51.00
	460-CP	13.50	51.00
	470-C	13.50	51.00
	470-CP	13.50	51.00
1934	940-C	21.00	58.50
	950-C	22.50	60.00
	860-C	25.50	63.00
	660-CP	27.00	64.50
	670-CP	28.50	66.00
	960-C	27.00	64.50
1935	104	30.00	67.50
	216	36.00	73.50
	326	40.50	78.00
	328	48.00	85.50
	114	30.00	67.50
	105	31.50	69.00
	106	36.00	73.50
	604	37.50	69.65
	606	43.50	81.00
	616	46.50	84.00
	626	55.50	93.00
	618	55.50	93.00
	628	63.00	100.50
1937	774	40.50	62.65
	704	43.50	65.65
	1166	49.50	69.65
	706	55.50	93.00
	726	58.50	96.00
	716	60.00	97.50
	728	70.50	108.00
	728	67.50	105.00
	728	78.00	115.50
1938	3874	46.50	62.65
	3876	49.50	65.65
	3804	51.00	66.65
	3906	61.50	94.15
	3836	72.00	109.50
	3816	75.00	112.50
	3826	81.00	118.50
	3838	82.50	120.00
	3818	84.00	121.50
	3828	97.50	135.00
1939	3954	54.00	70.50
	3964	54.00	70.50
	3946	55.50	72.00
	3956	55.50	72.00
	3976	67.50	80.50
	39076	67.50	80.50
	3966	67.50	80.50
	3986	70.50	87.00
	39086	70.50	87.00
	3936	76.50	98.00
	3906	81.00	97.50
1940	4064	55.97	59.47
	4044	59.15	62.65
	4056	64.50	69.65
	4066	75.43	78.93
	40076	77.00	80.50
	4086	82.50	87.50
	4096	82.50	90.65
	4016	87.00	103.50
	4026	94.50	111.00
	4018	97.50	114.00

COPELAND
If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	A-411	\$10.50	\$48.00
	A-441	10.50	48.00
	A-521	10.50	48.00
	A-551	10.50	48.00
	A-701	10.50	48.00
	D-681	10.50	48.00
	D-901	10.50	48.00
	E-661	10.50	48.00
	E-901	10.50	48.00
	E-152	15.00	52.50
	P-551	10.50	48.00
	P-701	10.50	48.00
1932	A-402	12.00	49.50
	A-442	12.00	49.50
	A-522	12.00	49.50
	A-562	12.00	49.50
	A-612	12.00	49.50
	A-772	12.00	49.50
	P-402	12.00	49.50

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1933	P-442	12.00	49.50
	P-522	12.00	49.50
	P-552	12.00	49.50
	P-612	12.00	49.50
	P-772	12.00	49.50
	W-42	13.50	51.00
	W-52	15.00	52.50
	W-6	15.00	52.50
	W-7	18.00	55.50
	P-6	18.00	55.50
	P-7	18.00	55.50
1934	P-11	19.50	57.00
	454	15.00	52.50
	604	16.50	54.00
	704	16.50	54.00
	854	18.00	55.50
	P-604	18.00	55.50
	P-704	19.50	57.00
	P-854	19.50	57.00
1935	505	19.50	57.00
	635	22.50	60.00
	755	22.50	60.00
	955	27.00	64.50
1936	T-96	22.50	60.00
	T-966	30.00	67.50
	T-966	34.50	72.00
1937	437	30.00	67.50
	537	33.00	70.50
	637	36.00	73.50
	737	40.50	78.00
	937	48.00	85.50
1938	54	38.00	75.00
	S-5	39.00	76.50
	S-6	43.50	81.00
	T-7-F	51.00	88.50
	T-9-F	60.00	97.50
1939	43-J	45.50	63.00
	55-J	51.00	67.50
	63-J	52.50	69.00
	76-J	61.50	78.00
	55-JD	57.00	73.50
	63-JD	54.00	70.50
	76-JD	67.50	84.00
	T-7-F	51.00	67.50
	T-9-F	60.00	76.50
	S-5	39.00	55.50
	S-5-F	39.00	55.50
	S-6	43.50	60.00
	S-6-F	43.50	60.00
1940	M-45	55.50	72.00
	M-67	60.00	76.50
	54-KF	68.00	82.50
	66-KF	70.50	87.00

CROSLLEY
If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1932	C-35	\$10.50	\$48.00
	C-45	10.50	48.00
	C-55	10.50	48.00
1933	D-35	10.50	48.00
	D-45	10.50	48.00
	D-55	10.50	48.00
1934	EA-35	19.50	57.00
	EA-45	21.00	58.50
	EA-55	21.00	58.50
	E-43	21.00	58.50
	E-55	21.00	58.50
	E-70	24.00	61.50
1935	FR-30	24.50	61.50
	FR-35	25.50	63.00
	FR-40	25.50	63.00
	FA-35	25.50	63.00
	FA-40	25.50	63.00
	FA-50	28.50	66.00
	FA-60	31.50	69.00
	FA-70	35.00	72.50
	F-43	25.50	63.00
	F-55	24.50	61.50
	F-70	36.00	73.50
	PFA-50	28.50	66.00
	PFA-60	31.50	69.00
	PFA-70	35.00	72.50
	PF-43	25.50	63.00
	PF-55	28.50	66.00
	PF-70	36.00	73.50
1936	GAQ-30	33.00	69.65
	GAQ-35	34.50	72.00
	GAQ-43	34.50	72.00
	GAQ-50	36.00	73.50
	GAQ-60	37.50	75.00
	GAQ-70	40.50	78.00
	PGKQ-50	36.00	73.50
	PGKQ-60	37.50	75.00
	PGKQ-70	40.50	78.00
	PGKT-50	36.00	73.50
	PGKT-60	37.50	75.00
	PGKT-70	40.50	78.00
1937	HB-1-30	39.00	69.65
	HB-1-31	39.00	69

Schedule of Used Refrigerator Prices (Cont.)

DAYTON (CONTINUED)			
1935	6-B-3	16.50	54.00
	7-B-4	18.00	55.50
	8-B-4	18.00	55.50
	2-83-P	18.00	55.50
	4-C-2	13.50	51.00
	5-C-2	13.50	51.00
	6-C-3	15.00	52.50
	7-C-4	16.50	54.00
	8-C-4	18.00	55.50
1936	4-S-2	16.50	54.00
	5-S-2	18.00	55.50
	6-S-4	21.00	58.50
	7-D-4	21.00	58.50
	8-D-4	22.50	60.00
1937	4-E-2-U	22.50	60.00
	6-E-4-U	25.50	63.00
	7-E-6-U	28.50	66.00
	9-E-8	33.00	70.50
	6-E-4-D	30.00	67.50
1938	4-H-2	27.00	64.50
	5-H-3	30.00	67.50
	6-H-4	31.50	69.00
	8-H-5	31.50	69.00
	10-H-8	45.00	82.50
1939	4-J	37.50	54.00
	5-J	45.00	61.50
	6-J	48.50	63.00
	5-JD	49.50	66.00
	6-JD	52.50	69.00
	8-JD	58.50	75.00
	10-JD	67.50	84.00
	5-JDA	51.00	67.50
	6-JDA	54.00	70.50
	8-JDA	60.00	76.50
	5-JDB	51.00	67.50
	6-JDB	54.00	70.50
	8-JDB	60.00	76.50
	10-JDC	70.50	87.00
1940	4-MP	49.50	66.00
	6-MA	55.50	72.00
	6-MAD	57.00	73.50
	6-MSD	61.50	78.00
	8-MD	67.50	84.00
	8-MCS	70.50	87.00
	10-MSD	97.50	114.00
	15-KD	112.50	129.00
	20-KD	127.50	144.00

FAIRBANKS-MORSE

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1934	AL-4	\$10.50	\$48.00
	AL-5	10.50	48.00
	AL-6	12.00	49.50
	AP-5	12.00	49.50
	AP-6	13.50	51.00
1935	B-4	13.50	51.00
	B-5	13.50	51.00
	B-6	15.00	52.50
	B-6S	15.00	52.50
	B-8	16.50	54.00
1936	C-4A	15.00	49.50
	C-4	15.00	52.50
	C-5	15.00	52.50
	C-6	16.50	54.00
	C-6S	16.50	54.00
	C-7	13.50	51.00
1937	DX-4	16.50	54.00
	DX-5	16.50	54.00
	DX-6	16.50	54.00
	D-4	19.50	57.00
	D-5	21.00	58.50
	D-6	22.50	60.00
	D-6S	22.50	60.00
	D-7	22.50	60.00
1938	EX-4	22.50	60.00
	EX-6	25.50	63.00
	EL-5	30.00	67.50
	EL-6	30.00	67.50
	EL-7	33.00	70.50
	E-4	28.50	66.00
	E-5	30.00	67.50
	E-6	30.00	67.50
	E-7	33.00	70.50

FRIGIDAIRE

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1927-28	M-52	\$13.50	\$51.00
	M-5	13.50	51.00
	M-7	15.00	52.50
	M-9	15.00	52.50
	M-12	24.00	61.50
	M-15	37.50	75.00
1929	V-4E	13.50	51.00
	V-4P	13.50	51.00
	V-5E	13.50	51.00
	V-5P	13.50	51.00
	D-4	16.50	54.00
	D-5	19.50	57.00
	D-6	19.50	57.00
	D-7-2	19.50	57.00
	D-9	27.00	64.50
	D-12	37.50	75.00
	AP-4	16.50	54.00
	AP-5	19.50	57.00
	AP-6	19.50	57.00
	AP-7-1	22.50	60.00
	AP-7-2	22.50	60.00
	AP-9	27.00	64.50
	AP-12	37.50	75.00
	AP-18	61.50	99.00
1930	G-3	15.00	52.50
	G-4	15.00	52.50
	G-5	18.00	55.50
	G-6	21.00	58.50
	MC-9	22.50	60.00
	MC-12	37.50	75.00

JARROW DOOR GASKETS

Preferred by Manufacturers, Jobbers, Service Men

WHY? Because refrigerator door gaskets are a specialty—not a side line—with Jarrow! As a result, Jarrow Gaskets are the choice of many leading refrigerator manufacturers who demand the best in gaskets for their boxes. And, too, because the Jarrow Line is most complete—standardized replacement gaskets to fit nearly 95% of all commercial and household refrigerators. Ask your jobber—the chances are he stocks Jarrow Gaskets, exclusively.

★ ★ ★

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General Offices: 420 N. La Salle St., Chicago

Gaskets for Every Refrigerator Need
Waterproof,
Sponge Rubber,
Rubberized Fabric,
Extruded,
Grease-proof
Synthetic Rubber,
Sponge
Rubber Tubing

CWM-5-40	113.40	116.90
CWM-6-40	123.90	127.40
CWD-6-40	141.00	148.40
CWD-8-40	163.00	169.50
CWI-6-40	154.50	165.55
CWI-8-40	165.00	181.50
CWI-13	247.50	264.00

GENERAL ELECTRIC

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1928	S-3	\$12.00	\$49.50
	S-5	12.00	49.50
	P-4	13.50	51.00
	P-5	13.50	51.00
	P-7	13.50	51.00
	R-5	13.50	51.00
	RT-5	13.50	51.00
	RT-7	13.50	51.00
	RS-5	13.50	51.00
	RL-95	13.50	51.00
	PL-95	13.50	51.00
	PL-13	19.50	67.00
	PL-17	25.50	63.00
	DX-75	13.50	51.00
	DX-10	13.50	51.00
	DX-14	19.50	57.00
	DX-18	27.00	64.50
1929	P-4	12.00	49.50
	P-5	13.50	51.00
	P-7	13.50	51.00
	G-35	16.50	54.00
	G-40	16.50	54.00
	G-55	19.50	57.00
	G-75	19.50	57.00
	G-100	27.00	64.50
	G-135	30.00	67.50
	G-175	40.50	78.00
	PL-95	13.50	51.00
	PL-13	19.50	57.00
	PL-17	25.50	63.00
	RT-5	13.50	51.00
	RT-7	13.50	51.00
	R-5	13.50	51.00
	RL-95	13.50	51.00
	DX-75	13.50	51.00
	DX-10	13.50	51.00
	DX-14	19.50	57.00
	DX-18	27.00	64.50
1930	G-35	16.50	54.00
	G-40	16.50	54.00
	G-55	19.50	57.00
	G-75	19.50	57.00
	G-100	27.00	64.50
	G-135	30.00	67.50
	S-42	16.50	54.00
	S-62	21.00	58.50
	S-100	27.00	64.50
	S-140	38.00	70.50
	S-180	45.00	82.50

P-4	12.00	49.50
P-5	13.50	51.00
PS-95	13.50	51.00
PS-13	30.00	67.50
S-42	16.50	54.00
S-62	21.00	58.50
S-82	24.00	61.50
S-100	27.00	64.50
S-140	38.00	70.50
S-180	45.00	82.50
SS-42	18.00	55.50
SS-62	22.50	60.00
SS-82	27.00	64.50
SS-100	31.50	69.00
SS-140	37.50	75.00
SS-180	52.50	90.00
PS-5	25.50	63.00
PS-6	27.00	64.50
PS-7	28.50	66.00
PS-9	31.50	69.00
PS-13	30.00	67.50
PS-17	52.50	90.00
SS-42	18.00	55.50
SS-44	18.00	55.50
SS-62	22.50	60.00
SS-67	24.00	61.50
SS-85	28.50	66.00
SS-107	34.50	72.00
SS-107	34.50	72.00
SS-140	37.50	75.00
SS-182	55.50	90.00
E-4	12.00	49.50
E-5	12.00	49.50
PS-45	22.50	60.00
PS-5	25.50	63.00
PS-55	27.00	64.50
PS-63	30.00	67.50
PS-95	13.50	51.00
PS-13	30.00	67.50
PS-17	52.50	90.00
HE-4-A	19.50	57.00
HE-5	21.00	58.50
HE-7	22.50	60.00
SS-44	18.00	55.50
SS-63	22.50	60.00
SS-67	24.00	61.50
SS-85	28.50	66.00
SS-107	34.50	72.00
SS-146	49.50	87.00
SS-182	55.50	93.00
P-44	18.00	55.50
P-55	19.50	57.00
P-62	22.50	60.00
P-67	24.00	61.50
P-85	26.00	63.00
P-110	36.00	73.50
P-134	48.00	85.50
P-170	58.50	96.00
P-4-180	82.50	120.00
PS-45	22.50	60.00
PS-5	25.50	63.00
PS-55	27.00	64.50
PS-63	30.00	67.50
PS-95	13.50	51.00
HE-4-B	19.50	57.00
HE-5	21.00	58.50
HE-7	22.50	60.00
F-4	28.50	66.00

	F-5	33.00	70.50	
	F-7	34.50	72.00	
	SS-107	34.50	72.00	
	SS-146	49.50	87.00	
	SS-182	55.50	93.00	
	HX-47	22.50	60.00	
	HT-47	22.50	60.00	
	HT-70	25.50	63.00	
	T-9	58.50	96.00	
	T-14	82.50	120.00	
	P-110	36.00	73.50	
	PS-45	22.50	60.00	
	PS-5	25.50	63.00	
	PS-55	27.00	64.50	
	PS-63	30.00	67.50	
	PS-95	13.50	51.00	
1935	X-4	22.50	60.00	
	X-5	27.50	75.00	
	X-6	42.00	79.50	
	X-7	46.50	84.00	
	K-4	37.50	75.00	
	K-5	42.00	79.50	
	K-7	46.50	84.00	
	KF-12	87.00	124.50	
	KF-15	109.50	147.00	
	T-5	43.50	81.00	
	T-7	49.50	87.00	
	T-9	58.50	96.00	
	P-134	48.00	85.50	
	P-170	58.50	96.00	
	P-4-180	82.50	120.00	
	PS-45	22.50	60.00	
PS-5	25.50	63.00		
PS-55	27.00	64.50		
PS-63	30.00	67.50		
PS-95	13.50	51.00		
1936	M-4	25.50	63.00	
	M-5	57.00	94.50	
	M-6	61.50	99.00	
	M-7	67.50	105.00	
	SM-66	58.50	96.00	
	SMP-66	73.50	111.00	
	NP-6	73.50	111.00	
	V-4	48.00	85.50	
	V-5	51.00	88.50	
	V-7	58.50	96.00	
	TM-7	79.50	117.00	
	TM-9	91.50	129.00	
	K-12	111.00	148.50	
	K-15	132.00	169.50	
	1937	JB-5-37	64.50	102.00
		JB-6-37	67.50	105.00
JB-7-37		76.50	114.00	
B-3-37		54.00	82.25	
B-4-37		61.50	99.00	
B-5-37		69.00	106.50	
B-6-37		73.50	111.00	
B-7-37		81.00	118.50	
B-8-37		91.50	129.00	
M-6-37		75.00	112.50	
M-8-37		93.00	130.50	
PB-6-37		91.50	129.00	
PB-8-37		108.00	145.50	
K-12		111.00	148.50	
K-15		132.00	169.50	
1938		JB-5-38	70.50	108.00
	JB-6-38	73.50	111.00	

(Continued on Page 22, Column 1)

Schedule of Used Refrigerator Prices (Cont.)

GENERAL ELECTRIC (Cont.)			
Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1939	JB-7-38	79.50	117.00
	B-3-38	60.00	85.75
	B-4-38	70.50	101.15
	B-5-38	79.50	117.00
	B-6-38	85.50	123.00
	B-7-38	93.00	130.50
	B-8-38	106.50	144.00
	PB-5-38	91.50	129.00
	PB-6-38	103.50	141.00
	PB-8-38	118.50	156.00
1940	PB-12-38	165.00	202.50
	PB-16-38	195.00	232.50
	LB-6-39	79.50	96.00
	BY-4-39	73.50	90.00
	JB-3-39	67.50	84.00
	JB-4-39	73.50	90.00
	JB-5-39	79.50	96.00
	JB-6-39	82.50	99.00
	B-3-39	67.50	84.00
	B-6-39	91.50	108.00
1941	B-8-39	100.50	117.00
	B-9-39	120.00	136.50
	PB-5-39	114.00	130.50
	PB-6-39	124.50	141.00
	PB-8-39	147.00	184.50
	PB-12-39	204.00	240.00
	PB-16-39	217.50	234.00
	B-3	73.50	85.75
	BY-4	94.50	100.45
	JB-5-40	91.70	95.20
1942	JB-6-40	109.50	114.80
	LB-6-40	76.83	80.33
	LB-8-40	75.00	87.15
	LB-4-40	82.50	94.33
	LB-6-40	90.83	94.33
	LB-8-40	115.50	125.65
	LBH-6-40	101.15	104.65
	LBH-8-40	121.50	129.15
	B-5-40	120.00	132.83
	BH-6-40	123.00	132.83
1943	B-6-40	132.00	146.83
	B-8-40	145.50	162.00
	PLB-6-40	114.63	118.13
	PB-5-40	142.50	150.33
	PB-6-40	154.50	164.33
	PB-8-40	165.00	181.50
	PB-12-40	232.50	249.00
	PB-16-40	307.50	324.00
	All models	10.50	48.00
	All models	15.50	53.00
	All models	21.50	59.00

GIBSON

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	All models	10.50	48.00
1932	All models	15.50	53.00
1936	All models	21.50	59.00

HOT POINT

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1933	HP4A	\$12.00	\$49.50
	HP4B	12.00	49.50
	HP4C	12.00	49.50
	HP5A	12.00	49.50
	HP7A	12.00	49.50
	PF4	27.00	64.50
	PF5	31.50	69.00
	PF6	33.00	70.50
	A4	37.50	75.00
	A5	42.00	79.50
1934	AP5	46.50	84.00
	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
1935	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
1936	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
	AP12	82.50	120.00
1937	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
1938	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
1939	AV52	46.50	84.00
	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
1940	AV70	52.50	90.00
	A5	37.50	75.00
	A7	42.00	79.50
	AP5	42.00	79.50
	AP7	46.50	84.00
	AP12	82.50	120.00
	AP15	102.00	139.50
	AV43	43.50	81.00
	AV52	46.50	84.00
	AV70	52.50	90.00

120EC33	124.50	141.00
110ED33	121.50	138.00
110ED33	121.50	138.00
110ED122	127.50	159.00
110ED162	157.50	174.00
110ED162	195.00	211.50
120EA3-40	69.00	85.50
120EA4-40	78.00	94.50
320EA63	76.83	80.33
220EA6-40	90.83	94.33
120EB3-40	111.00	125.65
120EB4-40	69.00	85.50
120EB5-40	94.50	108.33
220EB6-40	109.50	115.33
120EC5-40	115.50	132.00
220EC6-40	118.50	132.83
220EC8-40	127.50	144.00
110ED3-40	142.50	159.00
110ED4-40	141.00	157.50
110ED8-40	165.00	181.50
110ED140	232.50	249.00
110ED240	307.50	324.00

ICE-O-MATIC

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1933	Y-5	\$10.50	\$48.00
	Y-6	10.50	48.00
	L-53	10.50	48.00
	L-64	10.50	48.00
	L-53-T	10.50	48.00
	P-53	10.50	48.00
	P-64	10.50	48.00
	D-72	10.50	48.00
	D-44	10.50	48.00
	D-55	10.50	48.00
1934	D-66	10.50	48.00
	D-80	10.50	48.00
	P-66	10.50	48.00
	P-80	10.50	48.00
	S-354-1	12.00	49.50
	S-355-1	12.00	49.50
	S-356-2	12.00	49.50
	P-356-2	12.00	49.50
	P-358-2	12.00	49.50
	D-3641	13.50	51.00
1935	D-3651	13.50	51.00
	D-3662	15.00	52.50
	D-3682	15.00	52.50
	P-3662	15.00	52.50
	P-3682	15.00	52.50
	P-36122	16.50	54.00
	P-36152	16.50	54.00
	P-36192	16.50	54.00
	D-3741	13.50	51.00
	D-3751	13.50	51.00
1936	D-3762	15.00	52.50
	P-3762	15.00	52.50
	D-3782	16.50	54.00
	P-3782	16.50	54.00
	P-37122	16.50	54.00
	P-37152	18.00	55.50
	P-37192	18.00	55.50
	D-3941	22.50	60.00
	D-3951	22.50	60.00
	D-3961	27.00	64.50
1937	D-3982	27.00	64.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
1938-9	D-3941	22.50	60.00
	D-3951	22.50	60.00
	D-3961	27.00	64.50
	D-3982	27.00	64.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50
	D-3982	30.00	67.50

KELVINATOR

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1927-28	L-5-E	\$10.50	\$48.00
	L-5-P	10.50	48.00
	310	10.50	48.00
	273	10.50	48.00
	298	10.50	48.00
1929	M-4-E	10.50	48.00
	M-4-P	10.50	48.00
	M-5-P	10.50	48.00
	M-6-P	10.50	48.00
	U-4-P	10.50	48.00
	U-5-P	10.50	48.00
	U-7-P	10.50	48.00
	S-4	12.00	49.50
	S-5	12.00	49.50
	S-7	13.50	51.00
1930	S-9	13.50	51.00
	Y-524	12.00	49.50
	Y-5	12.00	49.50
	Y-7	13.50	51.00
	S-4	12.00	49.50
	S-5	12.00	49.50
	S-7	13.50	51.00
	S-9	13.50	51.00
	D-6	12.00	49.50
	D-8	12.00	49.50
1931	D-11	16.50	54.00
	D-14	28.50	66.00
	K-4	19.50	57.00
	K-24	19.50	57.00
	K-5	21.00	58.50
	K-6	25.50	63.00
	K-7	27.00	64.50
	PK-5	22.50	60.00
	PK-6	27.00	64.50
	PK-7	28.50	66.00
1932	S-4	12.00	49.50
	S-5	12.00	49.50
	S-7	13.50	51.00
	S-9	13.50	51.00
	D-6	12.00	49.50
	D-11	16.50	54.00
	D-14	28.50	66.00

Schedule of Used Refrigerator Prices (Cont.)

MAYFLOWER

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1932	F-34	\$12.00	\$49.50
	F-35	13.50	51.00
	F-36	15.00	52.50
	F-37	16.50	54.00
	F-38	18.00	55.50
1933	G-45	13.50	51.00
	G-5	15.00	52.50
	G-6	16.50	54.00
	G-7	18.00	55.50
	GP-5	15.00	52.50
	GP-6	16.50	54.00
	GP-7	18.00	55.50
	GP-11	19.50	57.00
1934	HS-45	15.00	52.50
	HS-6	19.50	57.00
	H-7	21.00	58.50
	HP-6	22.50	60.00
	HP-7	24.00	61.50
1935	M-505	22.50	60.00
	M-635	24.00	61.50
	M-755	27.00	64.50
	M-955	30.00	67.50
1936	G-46	25.50	63.00
	G-48	28.50	66.00
	G-49	30.00	67.50
	GP-66	34.50	72.00
	GP-86	40.50	78.00
1937	H-47	27.00	64.50
	H-48	30.00	67.50
	H-49	32.00	69.50
1938	K-48	42.00	79.50
	K-49	43.50	81.00
	K-50	45.00	82.50
	K-51	46.50	84.00
	K-52	48.00	85.50
	K-53	49.50	87.00
	K-54	51.00	88.50
	K-55	52.50	90.00
	K-56	54.00	91.50
	K-57	55.50	93.00
	K-58	57.00	94.50
	K-59	58.50	96.00
	K-60	60.00	97.50
	K-61	61.50	99.00
	K-62	63.00	100.50
	K-63	64.50	102.00
	K-64	66.00	103.50
	K-65	67.50	105.00

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1934	425	\$21.00	\$58.50
	450	25.50	63.00
	475	28.50	66.00
	500	31.50	69.00
1935	S-400	28.50	66.00
	S-550	33.00	70.50
	L-6500	36.00	73.50
	L-7500	39.00	76.50
1936	S-400	34.50	59.47
	S-550	37.50	62.47
	E-6620	42.00	66.97
	E-6620	46.50	71.47
	E-6620	51.00	75.97
	E-6120	55.50	80.47
	P-6625	59.50	84.97
1937	54	45.00	69.97
	66	49.50	74.47
	86	52.50	77.47
	652	62.50	87.47
	656	65.00	90.00
	858	67.50	92.50
	116	85.50	123.00
	654	60.00	97.50
1938	Std-58	57.00	94.50
	Std-68	61.50	99.00
	Std-88	65.50	103.00
	Del-658	73.50	111.00
	Del-668	76.50	114.00
	Sup-758	78.00	115.50
	Sup-958	85.50	123.00
	Sup-118	105.00	142.50
1939	Std-48	57.00	94.50
	Std-62	60.00	97.50
	620	66.00	103.50
	622	70.50	108.00
	Del-50	73.50	111.00
	Del-60	79.50	117.00
	Del-668	82.50	120.00
	Del-940	102.00	139.50
	Sup-760	88.50	105.00
	Sup-960	103.00	120.00
	Sup-118	105.00	121.50
1940	444	62.65	68.15
	64	58.77	62.27
	604	65.80	69.30
	524	73.15	76.65
	624	82.50	86.00
	614	76.97	80.47
	6224	76.30	79.80
	634	82.50	86.00
	644	87.00	91.50
	646	94.50	101.47
	744	91.50	97.50
	924	97.50	103.50
	944	105.00	111.00
	124	120.00	136.50

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	51	\$16.50	\$4.00
	51S	22.50	6.00
	61	19.50	5.00
	61P	19.50	5.00
	61P	21.00	5.50
	71P	24.00	6.50
1932	A	24.00	6.50
	B	24.00	6.50
	D	25.50	6.00
	BP	24.00	6.50
	DP	25.50	6.00
	F	30.00	6.50
1933	A44	25.50	6.00
	D5	28.50	6.50
	D66	33.00	7.00
	K	33.00	7.00
	J	28.50	6.50
	AP44	25.50	6.00
	DP66	33.00	7.00
	JP	33.00	7.00
	KP	33.00	7.00
	M	39.00	7.50
	R	48.00	8.50
1934	A45	34.50	7.00
	A55	37.50	7.50
	A71	45.00	8.50
	L54	39.00	7.50
	L67	42.00	7.50
	S47	36.00	7.50
	SP47	36.00	7.50
	SP55	39.00	7.50
	SP71	45.00	8.50
	P54	45.00	8.50
	P67	51.00	8.50
	P91	58.50	9.00
	P110	73.50	11.00
	E310	36.00	7.50
	E425	40.50	7.50
	L425	40.50	7.50
	L519	46.50	8.00
	L621	49.50	8.00
	L720	54.00	9.00
	L804	58.50	9.00
	P425	42.00	7.50
	P519	52.50	9.00
	P621	58.50	9.00
	P720	64.50	10.00
	P804	67.50	10.00
	P953	72.00	10.50
	P1117	82.50	12.00
	E32-6	37.50	7.50
	E42-6	51.00	8.50
	E52-6	52.50	9.00
	E62-6	55.50	9.00
	L42-6	54.00	9.00
	L52-6	57.00	9.00
	L62-6	63.00	10.00
	L72-6	70.50	10.00

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1937	L82-6	75.00	112.50
	P42-6	61.50	99.00
	P52-6	69.00	106.50
	P62-6	73.50	111.00
	P72-6	79.50	117.00
	P82-6	82.50	120.00
	P92-6	91.50	129.00
	P112-6	111.00	148.50
	S32-37	52.50	80.47
	S42-37	61.50	97.97
	S52-37	64.50	102.00
	S62-37	67.50	105.00
	S72-37	70.50	108.00
	N52-37	69.00	106.50
	N61-37	73.50	111.00
	N72-37	79.50	117.00
	N81-37	90.00	127.50
	P42-37	70.50	108.00
	P52-37	79.50	117.00
	P61-37	81.50	120.00
	P72-37	99.00	138.50
	P81-37	105.00	142.50
	LTP81-37	120.00	157.50
	LTP122-37	150.00	187.50
1938	A31-8	61.50	83.97
	S52-8	70.50	108.00
	S62-8	73.50	111.00
	S71-8	79.50	117.00
	R32-8	61.50	83.97
	R41-8	67.50	101.47
	R51-8	78.00	115.50
	R61-8	85.50	123.00
	R71-8	93.00	130.50
	R81-8	103.50	141.00
	R130-8	172.50	210.00
	P42-8	79.50	117.00
	P51-8	93.00	130.50
	P61-8	103.50	141.00
	P71-8	112.50	150.00
	P81-8	118.50	156.00
	LTP81-8	135.00	172.50
	LTP123-8	180.00	217.50
1939	G3	67.50	84.00
	G4	73.50	90.00
	G5	79.50	96.00
	G6	84.00	100.50
	GO4	73.50	90.00
	GO5	79.50	96.00
	GO6	84.00	100.50
	MH5	91.50	108.00
	MH6	97.50	114.00
	M5	91.50	108.00
	M6	97.50	114.00
	M8	117.00	135.00
	SN5	94.50	111.00
	SN6	100.50	117.00
	SN8	118.50	135.00
	MHP5	115.50	132.00
	MHP6	130.50	147.00
	S6	130.50	147.00
	S8	150.00	166.50
	P6	76.50	93.00
	PO6	79.50	96.00
	AR6	76.97	90.47
	ARH6	76.97	90.47
	AR6A	73.50	83.97
	VR3S	73.50	83.97
	VR3	73.50	83.97
	VR4	82.50	87.47
	VR6	94.47	97.97
	VR6A	97.47	97.97
	VR6B	100.50	104.97
	VR6P	105.00	118.97
	VR6AP	112.50	125.97
	VR6P	112.50	125.97
	MR5S	114.00	125.97
	MR5	102.00	111.65
	MR5A	102.00	111.65
	MR6	112.50	125.97
	MR6A	112.50	125.97
	DR5	123.00	132.97
	DR6	141.00	146.97
	DR8	153.00	169.50
	SR5	135.00	150.47
	SR6	154.50	167.97
	SR8	165.00	181.50

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1939	KX-4	\$52.50	\$89.00
	KX-6	57.00	93.50
	KC-5	63.00	99.00
	KC-6	66.00	102.00
	KC-7	67.50	104.00
	K-5	63.00	99.00
	K-6	66.00	102.00
	K-7	67.50	104.00
1940	LS-4	61.50	97.50
	LS-6	58.50	94.50
	LS-8	72.00	108.00
	LC-5	76.50	112.00
	LT-6	82.50	118.00
	LC-6	84.00	120.00
	LT-8	99.00	135.00
	LP-6	97.50	133.50
	L-6	100.50	136.50
	LP-8	105.00	141.00
	LH-6	102.00	138.00
	LH-8	105.00	141.00

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1933	ED-30	\$34.50	\$72.00
	ED-40	37.50	75.00
	ED-50	40.50	78.00
	ED-60	43.50	81.00
	ED-70	46.50	84.00
	ED-80	49.50	87.00
	ED-90	52.50	90.00
	ED-110	58.50	96.00
	EDP-50	45.00	82.50
	EDP-60	49.50	87.00
	EDP-70	54.00	91.50
	EDP-80	58.50	96.00
	EDP-90	63.00	100.50
	EDP-110	82.50	120.00
1934	EE-30A	39.00	76.50
	EE-40	43.50	81.00
	EE-50	48.00	85.50
	EE-60	52.50	90.00
	EE-70	57.00	94.50
	EE-80	61.50	99.00
	EE-90	66.00	103.50
	EE-110	85.50	123.00
	EEP-50	51.00	88.50
	EEP-60	55.50	93.00
	EEP-70	60.00	97.50
	EEP-80	64.50	102.00
	EEP-90	69.00	106.50
	EEP-110	88.50	126.00
1935	APT-35	46.50	84.00
	APT-45	49.50	87.00
	SP-45	54.00	91.50

SPRAGUE Universal MOTOR-STARTING CAPACITORS

Write for Sprague Booklet C-352 "A New Complete Story on Motor-Starting Capacitors." Get the facts about the small, Sprague Series 3500 Universal Motor-Starting Capacitors which enable you to make almost any replacement from a very small stock. They fit anywhere—are more dependable than the big old-style units they replace—are available for immediate shipment from 24 mfd. to 350 mfd., 110 V. A.C.

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**This
ONE SMALL
UNIT REPLACES
ALL OF THESE!**

Schedule of Used Refrigerator Prices (Cont.)

UNIVERSAL COOLER (Cont.)

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1933-4	400	18.00	55.50
	455	19.50	57.00
	X-402	19.50	57.00
	X-503	22.50	60.00
	X-604	24.00	61.50
	X-705	25.50	63.00
	X-604-P	25.50	63.00
	X-705-P	28.50	66.00
	435	30.00	67.50
1935	435	28.50	66.00
	535	31.50	69.00
	635	33.00	70.50
	835	36.00	73.50
1936	4-Plus	34.50	72.00
	5-Plus	37.50	75.00
	6-Plus	40.50	78.00
	8-Plus	45.00	82.50
	PB-4	38.00	73.50
	PB-6	42.00	79.50
	PB-8	48.00	85.50
	UNXP-6	55.50	93.00
1937	M-427	39.00	76.50
	M-547	43.50	81.00
	M-647	45.00	82.50
	5527	43.50	81.00
	5527	45.00	82.50
	D-537	45.00	82.50
	D-537	46.50	84.00
	D-757	49.50	87.00
	PD-65	51.00	88.50
1938	CL-408	49.50	87.00
	CL-528	52.50	90.00
	CL-628	55.50	93.00
	AD-538	54.00	91.50
	AD-658	57.00	94.50
	AD-758	60.00	97.50
	BD-538	55.50	93.00
	BD-658	58.50	96.00
	BD-758	61.50	99.00
	ADP-658	67.50	105.00
	BDP-658	67.50	105.00
1939	M-439	55.50	72.00
	M-539	60.00	76.50
	M-639	63.00	79.50
	D-539	69.00	85.50
	D-639	73.50	90.00
	D-739	79.50	96.00
1940	M-6-40	67.50	84.00

UNIVERSAL

(LANDERS, FRABY & CLARK)

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1934-35	445	\$15.00	\$52.50
	456	15.00	52.50
	467	15.00	52.50

478	15.00	52.50
489	15.00	52.50
867	15.00	52.50
878	15.00	52.50
1444	18.00	55.50
1455	18.00	55.50
1466	18.00	55.50
1477	18.00	55.50
1488	18.00	55.50
1866	18.00	55.50
1877	18.00	55.50
1888	18.00	55.50
S-4	22.50	60.00
D-5	24.00	61.50
D-6	25.50	63.00
D-8	27.00	64.50
84	28.50	66.00
85	30.00	67.50
86	33.00	70.50
88	39.00	76.50

WESTINGHOUSE

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
1931	WL-45	\$19.50	\$57.00
	WL-78	25.50	63.00
	WL-90	25.50	63.00
	DWL-55	12.00	49.50
	DWL-75	12.00	49.50
	DWL-100	15.00	52.50
	DWL-130	18.00	55.50
	DWL-180	45.00	82.50
	DWP-55	12.00	49.50
	DWP-75	12.00	49.50
	DWP-100	15.00	52.50
	DWP-130	18.00	55.50
	DWP-180	45.00	82.50

1932	AL-45	22.50	60.00
	AL-60	28.50	66.00
	AL-75	31.50	69.00
	AL-90	36.00	73.50
	AD-45	22.50	60.00
	AD-60	28.50	66.00
	AD-75	31.50	69.00
	AD-90	36.00	73.50
	AP-60	28.50	66.00
	AP-75	31.50	69.00
	AP-90	36.00	73.50
	AP-130	60.00	97.50
	AP-200	82.50	120.00

1933	BL-45	31.50	69.00
	BL-55	33.00	70.50
	BL-65	37.50	75.00
	BL-75	37.50	75.00
	BL-85	42.00	79.50
	BP-45	31.50	69.00
	BP-55	33.00	70.50
	BP-65	37.50	75.00
	BP-75	42.00	79.50
	CL-43	36.00	73.50
	CL-45	36.00	73.50
	CL-53	39.00	76.50
	CL-55	39.00	76.50
	CL-63	42.00	79.50
	CL-65	42.00	79.50
	CL-75	46.50	84.00
	CL-95	54.00	91.50
	CP-45	36.00	73.50
	CP-55	39.00	76.50
	CP-65	42.00	79.50
	CP-75	46.50	84.00
	CP-95	54.00	91.50

1934	D-42	40.50	78.00
	D-54	45.00	82.50
	D-60	47.50	85.00
	DL-44	45.00	82.50
	DL-54	48.00	85.50
	DL-67	52.50	90.00
	DL-78	57.00	94.50
	DLX-67	57.00	94.50
	DLX-78	57.00	94.50
	DLX-95	69.00	106.50
	DP-44	49.50	87.00
	DP-54	54.00	91.50
	DP-67	61.50	99.00
	DP-78	67.50	105.00
	DPX-67	67.50	105.00
	DPX-78	67.50	105.00
	DPX-95	79.50	117.00

1935	ED-40	40.50	78.00
	ED-50	51.00	88.50
	ED-60	57.00	94.50
	ED-70	63.00	100.50
	ED-80	69.00	106.50
	EDX-44	52.50	90.00
	EDX-54	60.00	97.50
	EDX-67	70.50	108.00
	EDX-78	76.50	114.00
	EDX-95	82.50	120.00
	EPX-44	55.50	93.00
	EPX-54	63.00	100.50
	EPX-67	75.00	112.50
	EPX-78	82.50	120.00
	EPX-95	90.00	127.50
	EPX-135	117.00	154.50
	EPX-200	157.50	195.00

1936	FS-50	69.00	106.50
	FS-60	75.00	112.50
	FS-70	81.00	118.50
	FDS-30	52.50	80.15
	FDS-40	58.50	86.00
	FDS-50	64.50	91.85
	FDS-60	70.50	97.70
	FDS-70	76.50	103.55
	FD-50	73.50	111.00
	FD-60	79.50	117.00
	FD-70	85.50	123.00
	FD-82	102.00	139.50
	FPS-50	79.50	117.00
	FPS-60	90.00	127.50
	FPS-70	97.50	135.00
	FP-52	115.50	153.00
	EPX-135	117.00	154.50
	EPX-200	157.50	195.00

1937	HS-52	70.50	108.00
	HS-62	78.00	115.50
	HS-72	84.00	121.50
	HU-30	61.50	99.00
	HDS-32	61.50	99.00
	HDS-42	70.50	108.00
	HDS-52	78.00	115.50
	HDS-62	84.00	121.50
	HDS-72	90.00	127.50
	HD-52	79.50	117.00
	HD-62	87.00	124.50
	HD-72	93.00	130.50
	HD-82	100.50	138.00
	HD-95	117.00	154.50
	HPS-52	93.00	130.50
	HPS-62	103.50	141.00
	HPS-72	112.50	150.00
	HP-62	108.00	145.50
	HP-72	118.50	156.00
	HP-82	125.00	162.50
	FP-135	172.50	210.00
	FP-200	217.50	255.00

1938	HU-30	61.50	99.00
	S-6-39	79.50	96.00
	H-3-39	67.50	84.00
	H-4-39	75.00	90.00
	H-5-39	79.50	96.00
	H-6-39	84.00	100.50
	A-5-39	91.50	108.00
	A-6-39	97.50	114.00
	A-8-39	120.00	136.50
	E-5-39	115.50	132.00
	E-6-39	130.50	147.00
	E-8-39	145.50	162.00
	HP-135	202.50	219.00
	HP-200	277.50	294.00
	LS-6-40	76.83	80.33
	U-3-40	73.50	83.83
	S-3-40	75.00	87.33
	S-4-40	83.83	87.33
	S-6-40	94.33	97.83
	S-8-40	108.00	124.50
	H-5-40	102.00	118.50
	H-6-40	109.50	122.33
	A-5-40	105.00	121.50
	A-6-40	112.50	129.00
	A-8-40	128.00	139.50
	D-6-40	141.00	153.83
	D-8-40	153.00	169.50
	E-6-40	154.50	160.83
	E-8-40	165.00	171.50
	A-135-40	247.50	264.00
	A-200-40	307.50	324.00
	E-135-40	255.00	271.50
	E-200-40	315.00	331.50

MISCELLANEOUS MAKERS

If a one-year guaranty is furnished, \$5 may be added to the prices in the second column for models of 1939 and 1940; and \$10 for earlier models.

Year	Model	Price "As Is"	Price Reconditioned With 90-Day Guaranty
	Atwater Kent	\$10.50	\$48.00
	Belleville	10.50	48.00
	Bohn	10.50	48.00
	Briggs	15.00	52.50
	Buckeye	10.50	48.00
	Cavaller	10.50	48.00
	Chilrite	10.50	48.00
	Commerce	10.50	48.00
	Graybar-Ilg-Kold	10.50	48.00
	Grinnell	10.50	48.00
	Grunow	12.00	49.50
	King-Kold	9.00	46.50
	Lectric-Ice Challenger	10.50	48.00
	Liberty	9.00	46.50
	Majestic (Sealed)	9.00	46.50
	Majestic (Open)	10.50	48.00
	Merchant and Evans	10.50	48.00
	Mohawk	12.00	49.50
	Rice	9.00	46.50
	Servel-Electric (Open)	10.50	48.00
	Servel-Electric (Hermetic)	9.00	46.50
	Starr-Freeze	12.00	49.50
	Trukold	9.00	46.50
	U. S. Hermetic	9.00	46.50
	Welsbach	10.50	48.00
	White Mountain	9.00	46.50
	Wurlitzer	12.00	49.50
	Zerozone	12.00	49.50

(e) Maximum prices for later model refrigerators. The maximum cash price for any 1941 model of used household mechanical refrigerator, reconditioned and guaranteed for 90 days, shall be 70 per cent, and for any 1942 model, 75 per cent, of the original list price of the refrigerator when new. If the refrigerator is sold "as is," \$3.50 must be deducted from the maximum price. If the refrigerator is sold with a one-year guaranty or more, \$5 may be added to the maximum price.

(f) Maximum prices for models for which maximum prices are not fixed in the preceding paragraphs. If the maximum price for any used household mechanical refrigerator is not specified in the preceding paragraphs, the maximum cash price shall be determined by the maximum price of the refrigerator listed in the foregoing table which corresponds most closely to the refrigerator being priced, with regard to age, finish, capacity, type of model and mechanical and cabinet equipment. The maximum price selected from the table shall correspond to the conditions under which the refrigerator is to be sold, i.e., "as is," or reconditioned with a 90-day or a one-year guaranty.

(g) Maximum prices for refrigerators with new or factory rebuilt units. (1) This section shall apply only in cases in which:

(i) The refrigerator meets the standards of a reconditioned refrigerator and is sold with a one-year guaranty.

(ii) The refrigerator contains a new unit or one rebuilt by the original manufacturer, or by a reconditioner who offered such a service in February, 1942, or earlier, and furnished with it at least a one-year guaranty.

(iii) The new or rebuilt unit has been purchased by the person offering the refrigerator for sale.

(2) The maximum cash price for a refrigerator with a new or rebuilt unit meeting the qualifications of the foregoing section shall be the sum of:

(

Rentals Covered In Revised Order on Used Refrigerators

(Concluded from Page 24, Column 5)

Refrigerators whose maximum sale price (reconditioned with a 90-day guaranty) is \$125.00 or more may be rented at a maximum monthly rate not to exceed 5 percent of the maximum sale price, calculated to the nearest half dollar.

(b) **Delivery of rental refrigerators.** An additional amount may be added to the rental rate to cover delivery and pick-up of rental refrigerators where such service is rendered, which may not exceed \$5.50.

(c) **Maintenance of rental refrigerators.** A rented refrigerator must meet the standards set forth for reconditioned refrigerators in Section 3 (a) and during the period of the rental must carry the guaranty provided for in Section 3 (c).

(d) **Rental payments in advance.** A person who supplies a rented refrigerator may not ask for or receive rental payments for more than three months in advance.

Section 5. **Prohibited practices.** (a) Any practice which is devised to get the effect of a higher than ceiling price without actually raising the dollar and cents price, is as much a violation of this regulation as an outright over-ceiling price. This applies to devices making use of commissions, services, transportation arrangements, tying agreements, tying requirements, trade understandings and the like. (b) The following practice is specifically prohibited:

(1) Offering to sell or rent a refrigerator only on condition that the buyer agree to pay for repairs, parts, and services.

Section 6. **Tagging.** No person shall sell or offer to sell, or rent, a used household mechanical refrigerator unless a tag is attached to the refrigerator which states whether the refrigerator is offered for sale "as is" or "reconditioned," the length of the guarantee to be supplied, the make, model and year of the refrigerator, the maximum selling price; and if the refrigerator is offered for rent, the tag also shall state the maximum monthly rental rate. A tag in the following form is satisfactory:

Make
Model
Year
Condition (Reconditioned)
("as is")
Guaranteed for (90 days)
(one year)
Maximum selling price: \$.....
(Maximum monthly rental rate: \$.....)

This tag must not be removed except by the ultimate consumer. If the maximum price for the refrigerator was determined under paragraph (f) or (g) of Section 3, the tag shall so state, and if the refrigerator has a replacement unit, shall carry the name of the supplier of the unit.

Section 7. **Sales slips, receipts and invoices.** Regardless of his former practice, every person selling a used household mechanical refrigerator in the course of trade or business shall furnish the purchaser with a sales slip, receipt, invoice or other writing, stating that the refrigerator sold is either "as is" or "reconditioned," the length of the guarantee supplied, the date of the sale, the make, model, number and year, the price charged, the nature and amount of any additional charges, and the name and address of the purchaser. If the maximum price was determined under paragraphs (f) or (g) of Section 3, this shall also be stated. A copy of such sales slip, receipt, invoice, or other writing shall be retained by the seller for inspection by the Office of Price Administration.

Section 8. **Enforcement.** (a) Persons violating any provisions of this Revised Maximum Price Regulation No. 139 are subject to the criminal penalties, civil enforcement actions, and suits for treble damages provided for by the Emergency Price Control Act of 1942.

(b) Persons who have evidence of any violation of this Revised Maximum Price Regulation No. 139 or any price schedule, regulation or order issued by the Office of Price Administration or of any acts or practices which constitute such a violation are urged to communicate with the nearest field or regional office of the Office of Price Administration or its principal office in Washington, D. C.

Section 9. **Petitions for Amendment.** Persons seeking any modification of this Revised Maximum Price Regulation No. 139 or exception not provided for therein may file petitions for amendment in accordance with the provisions of Revised Procedural Regulation No. 1, issued by the Office of Price Administration.

Section 10. **Applicability of the General Maximum Price Regulation.** The provisions of this Revised Maximum Price Regulation No. 139 supersede the provisions of the General Maximum Price Regulation with respect to sales and deliveries for which maximum prices are established by this Revised Maximum Price Regulation No. 139.

Section 11. **Geographical Applicability.** The provisions of this Revised Maximum Price Regulation apply to the forty-eight states, the District of Columbia, and the territories and possessions of the United States.

This regulation shall become effective April 15, 1943.

Issued this 24th day of March 1943.
Prentiss M. Brown,
Administrator.

Bonneville Is Made Officer Of Times Appliance Co.

NEW YORK CITY—E. A. Bonneville has been named a vice president of Times Appliance Co., New York distributor for a varied line of appliances, it was announced last week.

Bonneville has been with the firm since 1930 and, at the time of his appointment to the vice presidency, was sales manager of the appliance division.

Detroit Contractors' Petition Brought Out Inequities In Prices

DETROIT—The Refrigeration Contractors Association of Detroit believes it can take credit for bringing about some of the improvements in the recently revised Price Regulation 139 (Used Household Mechanical Refrigerators), according to Raymond M. Shock, executive secretary.

Shock reports that in December of last year the association filed a petition for amendment and protest with the OPA in Washington which voiced the discontent of refrigeration contractors over ceiling prices established by OPA on rebuilt and used refrigerators under MPR-139.

Prevailing ceiling prices prevented refrigeration contractors from rebuilding and selling their stock of refrigerators to the public, it was claimed in the petition, because these prices prohibited repair work for which the parts alone usually ran from \$15.00 to \$30.00.

Following the association's petition and subsequent correspondence with OPA, Shock was notified late in March of the revision on MPR-139, dated March 24, 1943.

Shock calls particular attention to the provisions in Section 3, paragraph G, permitting a dealer to install into a refrigerator a factory rebuilt unit, for which he may make a total charge of the "as is" price of the refrigerator plus the price of the unit installed. A one-year guarantee must accompany a sale of this kind.

As a result of the change, Shock explains, the regulation will now allow companies holding old refrigerators to rebuild the units contained therein and permit the sale of these refrigerators at a higher price than shown in MPR-139 but, in all such transactions, the purchaser must be given a statement itemizing every part used and the price charged for it.

Wholesale, Retail Radio Parts Pricing Rules Are Explained

WASHINGTON, D. C.—Wholesale and retail pricing methods on sales of new radio and phonograph parts may now be set by the same OPA orders establishing manufacturers' ceilings for these products, the Office of Price Administration announced recently.

Previously, wholesale and retail maximum prices were determined under the General Maximum Price Regulation at highest March 1942 levels.

Maximum Price Regulation No. 84 (Radio Receiver and Phonograph Parts) which hitherto has set manufacturer ceilings only, is changed accordingly in Amendment No. 4, effective March 30, to read:

"Paragraph (d) in § 1336.101 is amended to read as set forth below:

"(d) Other parts. The maximum price, exclusive of federal excise tax, for any part other than a part referred to in paragraphs (a), (b) and (c) of this section shall be in line with the net price, exclusive of federal excise tax, which the manufacturer of such part would have charged for it at any time during the period from Oct. 1 to Oct. 15, 1941, if such price had been calculated upon cost prevailing during such period by use of procedures and standards then employed in estimating costs and determining prices. No such part shall be offered for sale until the proposed price thereof has been approved by the Office of Price Administration on the basis of the report submitted pursuant to § 1336.101 (b). Such approval may also establish maximum prices which sellers of the parts generally may charge, including wholesalers and retailers of the parts."

Siegfried Schwegler of Buffalo Dealership Dies

BUFFALO—Siegfried J. Schwegler, 68, vice president of Schwegler Bros. Inc., electrical appliance dealer, died March 15 in his home here. Born in Switzerland, Mr. Schwegler came to this country at the age of 6. In 1904 he and his brother, Albert F. Schwegler, organized a bicycle firm. Gradually the firm expanded into the electrical appliance field.

WPB Borrows Federal Investigators To Aid CMP Compliance Check

WASHINGTON, D. C.—Plans for checking compliance with Controlled Materials Plan regulations are now being formulated by the War Production Board Compliance Division and, in the near future, a representative group of between 5,000 and 10,000 users of controlled materials throughout the United States will be checked by investigators for the Division.

Approximately 1,200 field inspectors will be used in the investigation, most of them being on loan to the WPB from the Federal Trade Commission, the Wage and Hour Division of the Department of Labor, the Federal Security Agency and others.

The investigation will follow lines adopted in the past for checking compliance with the Production Requirements Plan and other priority procedures.

While all CMP regulations will be covered in the survey, special emphasis will be placed on inventory controls and proper use of allotment numbers to obtain controlled materials.

"The investigation will be thorough," W. John Logan, head of WPB's Compliance Division, said in announcing the survey. "Compliance with Controlled Materials Plan regulations is of vital importance to war production, and willful violations will be treated accordingly."

The survey will be extended later to cover all companies operating under CMP, including producers of both "A" and "B" products and prime and secondary consumers.

Classification Symbols For Copper Held Over

WASHINGTON, D. C.—Allocation classification symbols for copper and copper base alloys will continue to be used during the change-over period from PRP to CMP at which time a different method will be established, WPB has announced.

Up-to-date allocation symbols must be furnished to producers of copper and copper base alloys by manufacturers of B-1 components, WPB says.

Form PD-226, in effect since last September, should report copper content of metals and not the gross weight. WPB complains that many

alloy scrap producers are reporting weights incorrectly because of carelessness in this connection and requests that the problem receive closer attention in the future.

Brass mills have been instructed by WPB to show on form PD-59e, their report of controlled material orders, all orders for the second quarter rather than, as has been done in some instances, only those which the mills feel it possible to handle and still stay within the percentage limit set by CMP regulation No. 1.

In case orders exceed the percentage limit, it was explained, then the sifting will be done through form PD-59e which must be filled 10 days before the opening of the month in which delivery is requested.

Midwest Refrigeration Supply Jobbers Association

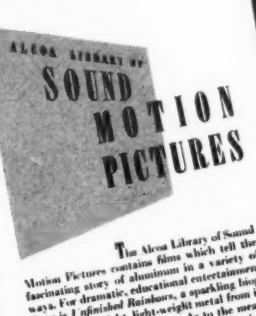
<p>Brass & Copper Sales Co. 2817 Laclede Ave. St. Louis, Mo.</p> <p>Dennis Refrigeration Sup. 359 Wesley Way Sioux City, Iowa</p> <p>Forslund Pump & Mach. Co. 1717-19 Main St. Kansas City, Mo.</p> <p>Hoffman Supply Co. 812 Booneville Springfield, Mo.</p> <p>Howard Supply Co. 737 N. Main St. Wichita, Kansas</p> <p>Interstate Mach. & Sup. Co. 1006 Douglas Street Omaha, Nebr.</p>	<p>Iowa Radio Corporation 1212 Grand Ave. Des Moines, Iowa</p> <p>Janda Refrigeration Supply 108 1st Street S. W. Cedar Rapids, Iowa</p> <p>K. & M. Supply Co. 208 N. Denver Ave. Tulsa, Okla.</p> <p>McCombs Refrig. Sup. Co. 1524 15th Street Denver, Colo.</p> <p>National Refrig. Parts 510 Water St. Sioux City, Iowa</p> <p>Refrigeration Equipm't Co. 101 East 24th St. Kansas City, Mo.</p>
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MIDWEST DEALERS and SERVICEMEN

Your SUPPLY-INSURANCE is carried by these 18 Local Jobbers—PROPER PRIORITY RATINGS on your orders is your share of the PREMIUM—PAY HERE

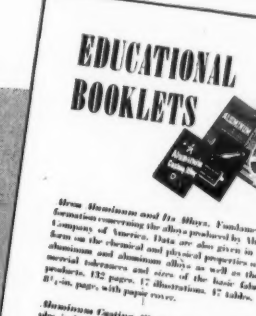
<p>Refrigeration and Industrial Supply Co. 422 So. 7th St. Minneapolis, Minn.</p> <p>Republic Electric Co. East 1st St. Davenport, Iowa</p> <p>Ruegg Refrigeration Sup. 223 No. 25th St. Omaha, Nebr.</p> <p>Vincent Brass & Copper 100 No. 2nd St. Minneapolis, Minn.</p> <p>Wickham Supply Co. 1512 N. St. Lincoln, Nebr.</p> <p>Winterbottom Supply Co. Commercial & Miles Sts. Waterloo, Iowa</p>	<p>Refrigeration and Industrial Supply Co. 422 So. 7th St. Minneapolis, Minn.</p> <p>Republic Electric Co. East 1st St. Davenport, Iowa</p> <p>Ruegg Refrigeration Sup. 223 No. 25th St. Omaha, Nebr.</p> <p>Vincent Brass & Copper 100 No. 2nd St. Minneapolis, Minn.</p> <p>Wickham Supply Co. 1512 N. St. Lincoln, Nebr.</p> <p>Winterbottom Supply Co. Commercial & Miles Sts. Waterloo, Iowa</p>
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ALCOA DIRECTS THIS MESSAGE TO Subcontractors



SOUND MOTION PICTURES

The Alcoa Library of Sound Motion Pictures contains films which tell the story of aluminum in a variety of ways for dramatic, educational, and entertainment purposes. The films are available in 16mm and 8mm sizes. They are the most complete and up-to-date collection of films on aluminum in the world. They are available for loan to schools, libraries, and other organizations. They are also available for purchase. The films are available in English and Spanish. They are available in black and white and color. They are available in 16mm and 8mm sizes. They are the most complete and up-to-date collection of films on aluminum in the world. They are available for loan to schools, libraries, and other organizations. They are also available for purchase. The films are available in English and Spanish. They are available in black and white and color. They are available in 16mm and 8mm sizes.



EDUCATIONAL BOOKLETS

Alcoa has prepared a series of educational booklets for use by subcontractors. These booklets are available in English and Spanish. They are available in black and white and color. They are available in 16mm and 8mm sizes. They are the most complete and up-to-date collection of booklets on aluminum in the world. They are available for loan to schools, libraries, and other organizations. They are also available for purchase. The booklets are available in English and Spanish. They are available in black and white and color. They are available in 16mm and 8mm sizes.

Are you one of the many companies who are working on airplane subcontracts?

It may be the first time you've worked with aluminum, and the job is strange to your workmen. You have received materials and specifications from your prime contractor, but you may need detailed information on some particular phase of the fabricating work.

Aluminum Company of America has prepared both literature and task-instruction motion pictures which are available to you. Often, this material will answer your questions adequately. In some cases, however, you

may require help on specific problems.

Alcoa engineers have spent a lifetime developing the best methods for fabricating aluminum alloys. Perhaps we've already helped some airplane builder solve the very problem that has you stymied. We're anxious to pass on all such information as will speed the war effort. Or, if it's a brand-new problem, we're ready to get going on that, too.

A letter or telephone call will start help on its way to you. Contact ALUMINUM COMPANY OF AMERICA, 1975 Gulf Bldg., Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

Canadian Conference 'Information Please' Supplies Answers on Technical Questions

Editor's Note: An "Information Please" session has always been a feature of the Toronto Refrigeration Conferences and the one last month was no exception. The board of experts who were "quizzed" included G. R. Allen, Mueller Brass Co.; G. E. Graff, Ranco, Inc.; R. Henderson, Wagner Electric Co.; J. W. Krall, Detroit Lubricator Co.; K. M. Newcum, Superior Valve & Fittings Co.; C. G. Heilig, Canadian Administrator of Refrigeration. Only the technical questions—as contrasted to those on priorities and rationing problems—are presented here.

Where Automatic Replaces Thermostatic Valve

Q. You said in your talk this morning that a thermostatic expansion valve could be replaced with an automatic valve. Would this be limited to a system controlled by a thermo-

stat?

A. Yes it would! That is right!

Instructions For Use

Of Liquid Indicators

Q. I would like detailed instructions of installation for use of liquid indicator. Can indicators show clear and yet liquid line not be full of liquid? Should the liquid indicator be installed before or after the dryer?

A. Liquid indicators should be installed between the dryer and the expansion valve, the closer to the valve the better, so as to be certain there is a full column of liquid at the valve. Never install the indicator between the receiver and the dryer.

Factory Repair of

Domestic Controls

Q. Will you be able to continue repairing domestic controls? Is it possible to get bellows only, by sending in the old ones?

A. Yes, we will still be able to repair domestic controls. As to the old bellows, they are of no use, as they cannot be repaired and are only good for the scrap pile. Bellows have been a little hard to obtain lately because it has been practically impossible for the past 16 months to secure the "drawings" from our suppliers and we have been using up our old stock. Bellows will, however, soon become available as the "drawings" are again being manufactured for us. ("Drawing" is the process of forming a cup shape from a flat disc of metal.)

Types of Causes of

Radio Interference

Q. Are there any other causes besides overloaded lines that gives radio interference?

A. There are several causes:
(1) Dirty short circuiting necklace.
(2) Partial ground of stator caused through dirt.
(3) Rough commutator on brush riding motor.

A .005 size condenser will take out interference. When you put a condenser on you change the frequency of the noise you do not eliminate the noise or the cause.

Canadians Get the Low-down on Some Refrigeration Problems



Some of the speakers at the recent Toronto Refrigeration Conference sponsored by the Canadian R.S.E.S. are caught in action by the candid camera. From left to right: (1) J. W. Krall, Detroit Lubricator Co., leans forward to emphasize a point in his

talk on "Emergency Servicing." (2) E. G. McCracken, Wagner Electric Co., gropes to find the answer to a tough one. (3) T. W. Savill, president-elect of the Interprovincial Chapter of R.S.E.S., addresses the conference. To his left are George Taubeneck,

editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS, and W. J. Marshall, also an officer of the Interprovincial Chapter. (4) K. M. Newcum is a perennial speaker at the Toronto meetings. (5) C. G. Heilig, the Canadian Refrigeration Administrator.

Can Hand Valves Be

Dispensed With?

Q. Hand valves seem to be very scarce. Will they be any more plentiful soon, or not? Would you not consider them necessary on multiple hook-ups where unit will not hold the pump down of the system?

A. Yes, they are necessary in a system where the holding capacity of the receiver is less than the capacity of several evaporators. You have to have some means of handling this. You should not skimp on the material such as hand valves to the point where you put in an installation that cannot be serviced properly.

The shortage of valves is probably localized. There is no letdown in the making of these valves. It takes about 120 days from the time the order is received in the plant, entered, etc., and finally delivered, that is in the normal course of events. You can safely figure three to four months before you will get them in these days, however.

5-Pound Surge in

An Ordinary System

Q. On a recent installation of a Peerless blower coil in a butcher box I had to use a "Freon" thermostatic expansion valve which we thought was a little larger than necessary for the job. When the job started there was a 5-pound surge, check-back showed still a 5-pound surge. Could valve be adjusted to the proper point to stop surging?

A. We have to make the presumption that the valve was over-sized because we have not the size of the orifice. The valve called for more refrigerant, the needle was lifted from the seat enough to allow a slug of liquid to pass through and that gave the 5-pound surge.

Which Expansion Valve

On Water Bath Cooler

Q. In water bath coolers is there much preference between the use of automatic or thermostatic expansion valves when temperature control is used?

A. On installations of that kind we

should use the thermostatic valve. You want to keep the coil refrigerated at all times. The valve should feed the refrigerant into the coil completely and not by steps.

Drying Agent Only Appears

To Have Broken Down

Q. Why will Silica Gel break down and deposit in expansion valves, moisture normal, using methyl or "Freon"?

A. Silica Gel is processed sand. It will not break down; at least the refrigerant will not break it down; about the only way I know of is with a hammer. Particles may rub off, but it will not break down.

The chances are it is not Silica Gel that you find in your screen. You

may have the dryer installed upside down and this will take the slough-off Silica Gel. Filters should be used. The dryer is not properly fortified on the outlet end if you find Silica Gel in your screen.

Sometimes dryers blow apart. We know that it is impossible if normal pressure were exerted for a dryer to blow apart. The reasons for dryers blowing apart we suspect is caused by a hydrostatic pressure being built up in the liquid line due to the valves being closed at each end of the liquid column allowing this pressure to develop due to heat absorbed by liquid in column. One open outlet for gas should be allowed on liquid lines at all times when servicing equipment to prevent cool liquid absorbing heat and expanding!

NEED METHYL CHLORIDE?

NOW

IS THE TIME TO GET IT

WE expect to be able to supply the current requirements of the refrigeration industry for Methyl Chloride, subject to the regulations of the War Production Board. Order what you need but please do not stock up unnecessarily. Electrochemicals Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Del.



Important

Don't let idle cylinders hold up supplies now available. Look through your stocks and warehouses for any empty cylinders, or cylinders which can be emptied . . . and return them promptly.

METHYL CHLORIDE

REFRIGERATION PARTS NEEDED

Idle and surplus inventories of refrigeration parts can now be put to essential use in helping to maintain the nation's huge investment in refrigeration.

We buy outright for cash, usable parts for distribution to over 20,000 refrigeration service-men customers. Let us put your idle inventories to good use—you will then be helping conserve scarce and precious materials.

The Harry Alter Co.

1728 So. Michigan Ave.
Chicago, Illinois

WPB REVOKES
GENERAL
PREFERENCE
ORDER M-219



Still-Rising Production
ASSURES YOUR SUPPLY

GREATER CAPACITY
1½ to 2 times as much as other drying agents.

ACTS INSTANTLY
REMOVES ACIDS
WILL NOT DUST
NOR POWDER

"It's a superior drying agent . . . does a superior job" . . . the consensus of service engineers and equipment manufacturers.

Production figures revealed that General Preference Order M-219 was no longer necessary. Once again, you have the opportunity to ask your jobber for Davco Silica Gel . . . and get it . . . as much as you need . . . when you need it.

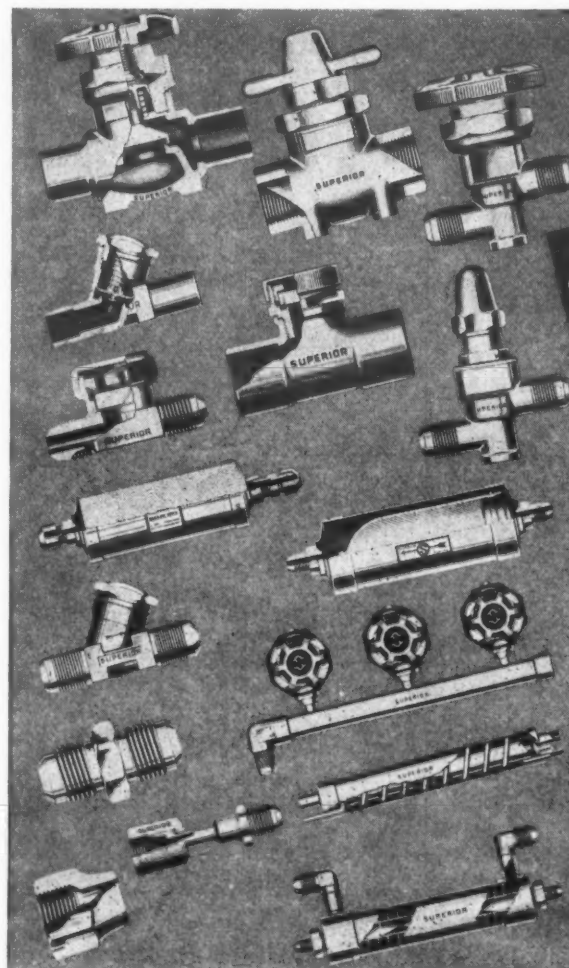
Supplying the armed forces is still our major job. But you can be sure that no stone will be left unturned to see that your needed supply of Davco Silica Gel is available . . . your customers need the protection it gives their vital food supply.

THE DAVISON CHEMICAL CORPORATION
Industrial Chemicals Department
BALTIMORE • MARYLAND

ALWAYS ASK YOUR JOBBER FOR

Davco Accelerated

SILICA GEL



Superior has gone to War!

- ★ DIAPHRAGM PACKLESS VALVES
- ★ PACKED AND PRESSURE CUP VALVES
- ★ CHECK VALVES AND LIQUID INDICATORS
- ★ DEHYDRATORS AND FILTERS
- ★ MANIFOLDS AND HEAT-EXCHANGERS
- ★ FITTINGS AND ACCESSORIES

Even though we are working "round the clock" on implements of war, every passing month strengthens our conviction that refrigeration equipment is so vitally essential that we should continue to allocate an increasing percentage of our manufacturing facilities, personnel and planning to our refrigeration products.

THAT'S OUR POLICY . . . continuing to do even a better job of supplying, as promptly as conditions will permit, more valves, manifolds, heat exchangers, dehydrators, liquid indicators, fittings and accessories to manufacturers, jobbers, installers and service engineers.

Write for Copy of Catalog R-2

No. 86

SUPERIOR VALVE & FITTINGS CO.
1509 WEST LIBERTY AVENUE
PITTSBURGH • PENNSYLVANIA

Philco Announces Arrangements For Its Postwar Export Sales Setup

NEW YORK CITY—Philco Corp., by agreement with American Steel Export Co., Inc. has formed the Philco International Corp. to handle sales of Philco products in all countries outside the U. S. in the post-war period, it has been announced by Larry E. Gubb, chairman of the board of directors of Philco, and Howard W. McAteer, president of American Steel Export.

Officers of the projected Philco International Corp. will be: Larry E. Gubb, chairman of the board of directors; Dempster McIntosh, president; John S. Haber, vice president; and William R. Wilson (treasurer of Philco Corp.), treasurer. These four men, McAteer, and Russell L. Heberling of Philco will make up the board of directors.

For 26 years American Steel Export has marketed Philco products abroad.

A joint statement by Gubb and McAteer says, "Because of Philco plans for expansion of its export business at the end of the war, and because post-war developments of Philco Corp. might cause it to enter fields in competition with products of

other manufacturers represented in countries outside the U. S. by the American Steel Export Co., Inc., it has been deemed in the mutual interest of the two companies to discontinue the arrangement whereby American Steel Export Co., Inc. has handled the sale of Philco products outside the U. S. Philco International Corp. will, therefore, take over and carry forward the further development of the distribution of Philco products outside the U. S."

In the statement issued by Gubb, he says, "One beneficial result of the war should be to bring all the world closer together and stimulate much greater trade between countries, and especially between North and South America. If we as a nation will buy from other countries the things they specialize in producing, they in turn will be able to get from us such products as refrigerators and radio sets which have come to be regarded as typical of the United States."

McAteer states that the American Steel Export Co. will continue to represent its other manufacturers as well as new ones in the radio and electrical appliance field.

New Data Offered On 'Stratosphere Testing' By the Kold-Hold Co.

LANSING, Mich.—Illustrated technical literature dealing with sub-zero and stratosphere processing and testing machines, stratospheres, and crystal testing, has just been made available by Kold-Hold Mfg. Co.

In line with work being performed in Kold-Hold laboratories, the 36-page book, "Kold-Hold Thermal, Sub-Zero and Stratosphere Processing and Testing Machines," embraces all phases of stratosphere research from the machines used, temperatures and pressures required, to instrument, material, and aircraft testing.

Operation of many machines such as dual-temperature baths, walk-in chambers, and coolant coolers is explained and diagramed.

"Kold-Hold Stratospheres" and "Crystal Test Unit" are leaflets giving a quick description of the two named subjects.

Copper Supply Critical; To Bear Down on Scrap

CLEVELAND — Available copper supplies having reached a new low, all salvage dealers in the country will be asked in a short time to give up 50% of their copper inventories each month, WPB salvage managers announced at their national conference here.

Bronze and brass, as well as copper, are needed so acutely that not only scrap dealers, but also the general public will be requested to turn over these metals even though they do not fall under the classification of scrap, stated Paul C. Cabot, national director of the salvage division of WPB at the conference.

WPB's scrap drive will bear down on the collection of all scrap metal as the need is urgent, according to Merrill Stubbs, chief of the Scrap Processing Branch.

He estimated that about 10 pounds of scrap metal per capita will be required this year.

Refrigeration Serves To Broaden Range of Bull's Activities

LUBBOCK, Texas—With the help of a refrigeration system, Texas bulls are finding it easy to sire 500 calves a year anywhere in the western hemisphere by a long-distance method developed here lately at a cattlemen's association laboratory.

By refrigerating sperm extracted from a bull to 40° F. and holding it at that temperature, cattlemen have discovered that the sperm remains alive for a period of 10 days which allows time for it to be flown from Texas to Argentina, Chile, or Brazil where the propagation of beef cattle is being speeded up.

Small cabinets holding 1-hp. refrigeration compressor units are used to house the fluid and are plugged into an airplane electrical circuit while being transported.

Cattlemen state that healthier, better cattle are produced and that, while ordinarily one bull must be maintained for 50 cows, by the use of this artificial breeding a cattleman does not even have to own a bull.

The cows are contented, it is said.

WPB Reports On Its Investigations; Very Few Are Punished

WASHINGTON, D. C.—The number of Suspension Orders issued to date is surprisingly small in relation to the thousands of companies surveyed for compliance with War Production Board priority and regulations, W. John Logan, Director of the Compliance Division, has reported.

Close to 75,000 investigations of all types have been made which resulted in 247 Suspension Orders and 59 criminal prosecutions. In only one criminal case was a prison sentence imposed. A considerable number of the total cases revealed violations of a technical nature which had not impeded the war effort.

Supplementing these statistics, Mr. Logan said that letters from all over the country show a general willingness to comply with WPB orders.

Mr. Logan pointed out that compliance activity is not primarily enforcement but its main underlying principle is to obtain compliance through the understanding and co-operation of individuals and industry. The Compliance Division, therefore, makes a special effort to analyze orders which are most frequently violated with a view to suggesting changes which might improve the compliance.

For example, until recently more suspension orders were issued as a result of violations of the construction order, L-41, than of any other order. As a result of examinations of

comments on orders, the processing of most construction applications has recently been decentralized and is now handled by WPB's 12 regional offices instead of wholly in New York. It is anticipated that the faster service which can be provided by the regional offices and the closer acquaintance of regional officials with local construction problems will result in a considerable decrease in violations.

"Public response indicates a general demand for enforcement of wartime regulations," Mr. Logan said. "People show a considerable resentment against unnecessary construction or use of materials even when non-critical materials are involved. As the public begins to have a better understanding of the necessity for using available materials and manpower entirely for war and strictly essential non-military purposes, the sentiment for enforcement grows steadily stronger."

Philco 1942 Profit Was \$2,209,992

PHILADELPHIA—Philco Corp. in its annual report for 1942 shows a net income of \$2,209,992 or \$1.61 a share after federal income and excess profits taxes and after providing a reserve for contingencies in the amount of \$1,000,000.

This compares with \$2,513,569 (\$1.83 a share) in 1941. Earnings for 1942 include the post-war refund of excess profits taxes of \$538,792.

Philco corporation's total sales of civilian products and war goods before refunds amounted to \$73,505,979 in 1942, as compared with \$77,073,636 in 1941, the report states.

Mounted Wheels Described

CHICAGO—A new booklet on the use of mounted wheels and accessories for portable tools has recently been presented by the Chicago Wheel and Manufacturing Co. here.

Information is given covering the application of these production aids.

FOR REFRIGERATION AND WAR WORK



NIBCO WROT FITTINGS
RETURN BENDS AND TUBULAR PARTS

BEFORE you order a special part look in our Catalog No. 613 showing NIBCO Wrot Fittings for Air Conditioning and Refrigeration. Nine chances out of ten you'll find what you need in our standard line . . . tees, elbows, couplings, reducers, adapters, crosses, return bends, hangers . . . more than 1000 items and sizes are listed. Write for your copy if you do not have one. NIBCO also manufactures a vast number of amazingly interesting fabricated tubular and non-ferrous cast parts. Tell us your problem . . . we'll give you the answer.



NORTHERN INDIANA BRASS CO.

ELKHART, INDIANA

VALVES AND FITTINGS SINCE 1904




FOR PEAK PERFORMANCE
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before - during - after -
★ ALWAYS! ★

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★ You Can Install SPORLAN VALVES with Confidence! ★

How Refrigeration Systems Are Installed on Kaiser Cargo Ships

Prefabrication Halves Time As Work Schedule Tightens To Meet '43 Launching Pace

Probably every person in the refrigeration industry is familiar, to some extent at least, with the Henry J. Kaiser technique of producing Liberty Ships for the Maritime Commission in sensationally fast time. What is not generally known, however, even in this industry, is that the installation of refrigeration equipment aboard these ships has also been revolutionized in typical Kaiser fashion to keep pace with the accelerated ship launching program.

Perhaps the outstanding example of Kaiser pre-fabrication methods in the construction and installation of marine refrigeration is provided at the No. 2 yard of the Permanente Metals Corp., subsidiary at Richmond, Calif. Here, under the direction of Steamfitter Quartermaster in charge of Refrigeration B. L. (Buck) Benell, installation time of refrigeration equipment used on the famous 10,500 ton EC-2 Liberty Ship has been cut to less than half the time previously required for such installations aboard similar ships.

Equipment on Ship

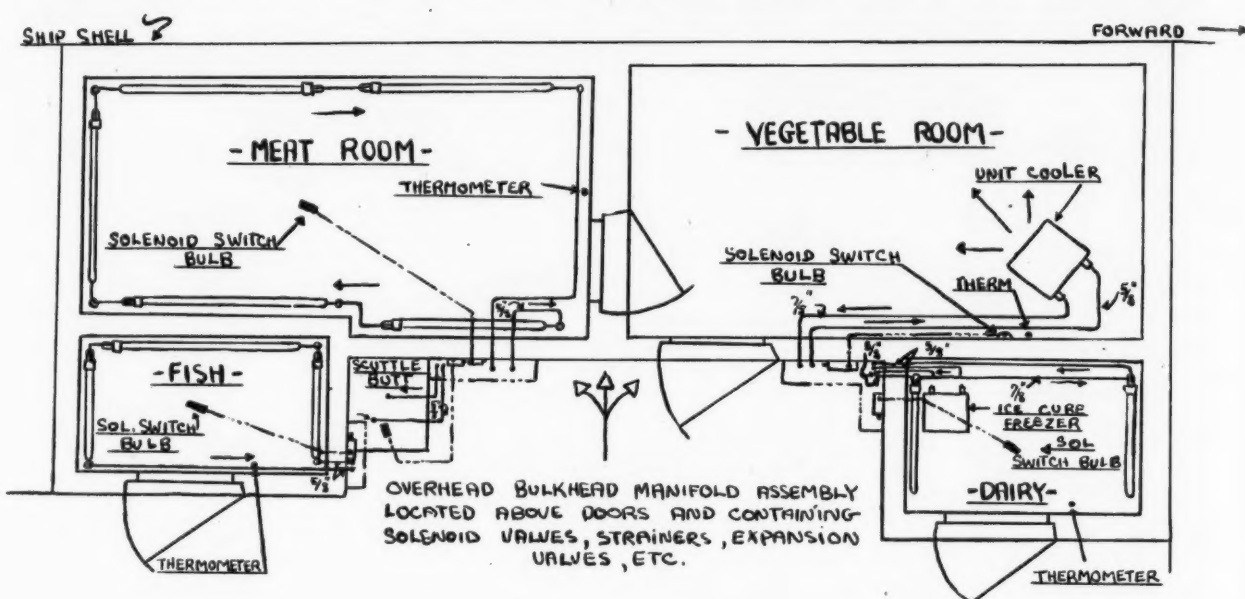
Refrigeration equipment aboard the EC-2 cargo ship consists of four food

storage rooms designed, respectively, for the storage of meats, vegetables, fish and dairy products, and of a storage-type skuttlebutt water cooler supplying drinking water for the ship's crew. This equipment is refrigerated by a 7½-ton "Freon" condensing unit located in an adjoining compartment and equipped with a special overhead water cooled condenser and receiver.

Largest of the rooms is that for the storage of meats, measuring 8 feet in width, 14 feet 7 inches in length, and with a height of 7 feet 6 inches inside the 10-inch cork insulated enclosure, for a total capacity of 801 cubic feet. Equipped with 506 lineal feet of 1½ inch bare steel pipe coil, arranged in five banks lining three walls of the room, temperatures in this room are held at 10° F. Located just inside the hull on the port side of the ship, this room is placed in tandem with, and opens into, the vegetable storage room.

The vegetable storage room, second largest of the group, is likewise 8 feet wide, and measures 13 feet 4 inches long by 7 feet 6 inches high, with a content of 768 cubic feet insulated with 8 inches of cork. Cool-

General Plan of Refrigeration Equipment Used on EC-2 Liberty Ship



ing in this room is accomplished with a forced draft blower coil, holding temperatures to 40° F. Access is made to the vegetable compartment directly from the ship passageway, but the meat room is entered only through the refrigerated vegetable room.

The fish room, paralleling the meat room and jutting into the passageway, measures approximately 4 feet by 6 feet by 7 feet 6 inches, and has a content of 173 cubic feet. It is equipped with 170 lineal feet of 1½ inch bare steel pipe coil, arranged in banks on three sides of the room to hold a temperature of approximately 10° F. A cold storage door midway of the long wall provides access to this room directly from the passageway.

At the opposite end of the refrigerated section, parallel to the vegetable room and adjacent to its passageway wall is the dairy compartment, measuring approximately 4 feet by 6 feet by 7 feet 6 inches inside and providing 176 cubic feet of storage space. Cooling of this room to the required 30° F. is accomplished through the use of 75 lineal feet of 1½ inch bare pipe coil arranged in banks on the forward and aft walls, and an ice cube maker coil arranged in banks on the forward and aft walls, and an ice cube maker is also hung in this room at the aft port corner. Like the fish room, this compartment has a cold storage door opening into the ship passageway.

A 15 foot long by 4 foot deep recess is thus formed along the passageway walls of the vegetable and meat rooms, and between the ends of the fish and dairy rooms.

The skuttlebutt is mounted at the aft end of this recess, in the corner formed by the forward wall of the fish room and the passageway wall of the meat room. Water at a 44° F. temperature is supplied from the skuttlebutt to the water cooler located on the upper deck of the ship in the passageway over the skuttlebutt.

With such an overall, though sketchy, outline of the refrigeration equipment aboard these ships, it is possible to grasp the problems of installation involved in completing the construction job quickly and with a minimum of confusion and unnecessary motion.

Under Benell, refrigeration installation aboard these ships was first broken down into its component parts and the entire operation subdivided and scheduled according to the individual requirements of each operation involved in the construction program.

In making out definite fore-planned work schedules for the job, several potential installation time cuts became readily apparent as the overall picture was broken down piecemeal and the pieces reassembled for efficient and planned operations on a 24-hour-a-day basis.

Prefabrication Details

Most important reduction in time achieved by Benell has been the almost complete pre-fabrication of the bulkhead manifold assemblies used on these ships and carrying practically all of the refrigeration controls and piping.

When construction of the Liberty Ships at the Richmond yards first began, plans called for the use of three main control panels and numerous individual controls hung in vari-

ous places along the passageway wall in the recess adjoining the meat and vegetable rooms. Since these control panels varied in size, height and position, and usually had to be installed simultaneously, the general result was terrific confusion in the passageway during the shipfitting period, at the very time when the passageway was badly needed for other use. In addition, fitters on the installation job not only got in each other's way in the crowded recess and passage, but usually had great difficulty in installing equipment in time to clear the job for inspection by the time the rest of the ship was ready for its test run.

Under Benell's operation, all controls and associated piping for all four rooms and the skuttlebutt are mounted on a single 15 foot long bulkhead manifold panel in the refrigeration shop in the yards and, except for three piping bends, the panel is completely pre-fabricated before being taken to the ship.

First step in setting up the pre-fabrication system was to build a sample master panel in the shop with all piping and controls located as nearly in line as possible. When the sample board had been constructed and minor corrections made to make it adaptable to actual installation conditions aboard ship, templates were drawn and fabricated so that piping used on the manifold board could be bent on a precision mass production basis.

Finding that this plan worked out beautifully, permanent patterns were subsequently made and a work schedule set up to gear the shop pre-

fabrication system to the best time advantage of all fitters, pipe men, trainees and others working on the complicated board assembly.

When the pre-fabrication plan was finally put into effect on a regular basis, it was found that this bulkhead assembly alone had cut man hours on the refrigeration job as a whole by 25%, and installation time of the bulkhead assembly itself by 70%, plus saving other, untraceable time as a result of the fact that workmen were no longer indefinitely hindering the passage of others along the narrow passageway aboard ship where the work had previously been done.

By doing the work in the shop, it was found that substantial savings of vital materials could be made through cutting tubing to exact lengths according to the precision patterns, and through eliminating copper tees formerly used in joint work.

As a corollary benefit, placing the manifold assembly on a single panel high up in the passageway, instead of at random heights halfway up the bulkhead walls, has eliminated the possibility of accidents resulting from careless handling of boxes or tools being carried through the passage and knocked against the instruments. Only with pre-fabrication, it was found, could the assemblies be satisfactorily placed in the high and cramped overhead position.

Placing the manifold assembly job on a definite and predictable production basis allowed the yard to set up an hour-by-hour schedule for actual construction of all refrigeration

(Concluded on Page 29, Column 1)

Food Spoilage

Spoilage of American food is right up der Fuehrer's alley!

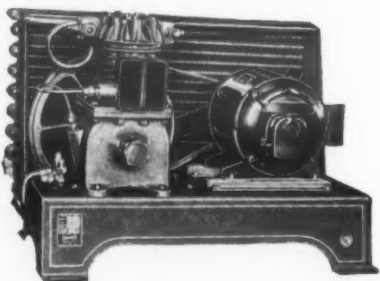
With America not only the Arsenal of Democracy but the Larder as well, food today means as much to the Allied Nations' cause as bullets and bombs. Without food, soldiers cannot fight and win. Without it, war workers can't do their jobs right. And civilians must have proper food to keep the national health standards high.

There's only ONE way to combat food spoilage...proper refrigeration!

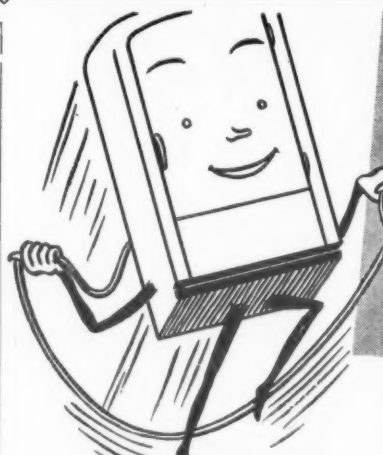
Synonymous with "proper refrigeration" is the name of "Brunner." For many years the Refrigeration Industry has come to regard Brunner condensing units and refrig-

eration equipment as thoroughly dependable in every respect. Today that enviable reputation is undergoing the test of its life...and coming through with flying colors!

Before the war, Brunner was tops. During this war Brunner still leads. And when the war is over, and for many years after that, you can pin your faith on Brunner...and never be let down!



BRUNNER MANUFACTURING CO., UTICA, N. Y., U. S. A.




WARTIME REFRIGERATION IS IMPORTANT TO VICTORY

The electrical refrigeration equipment now in use should be kept at peak efficiency.

ANSUL SULPHUR DIOXIDE METHYL CHLORIDE

are readily available in sufficient quantities and with their well-known quality — in carload lots or handy cylinders sized for servicemen's needs.



Save Steel
FOR VICTORY BY RE-
TURNING EMPTY DRUMS
PROMPTLY.

ORDERS FILLED THE DAY RECEIVED

ANSUL CHEMICAL COMPANY
Agents for Kinetic's "Freon-12"
MARINETTE WISCONSIN

28 years of Knowing How

INVEST AT LEAST 10% OF YOUR EARNINGS IN WAR BONDS

Sulphur Dioxide... 25, 70 and 100-lb. cylinders

Methyl Chloride... 15, 40 and 60-lb. cylinders

Efficient service through Ansul jobbers near you

Novel Ideas Used On Jobs Installed In Kaiser Ships

(Concluded from Page 28, Column 5)

equipment aboard the Liberty Ships. Time graphs showing the scheduled and actual progress of the refrigeration equipment aboard every ship in the yard have now been set up, and behind-schedule work can not only be spotted but the cause recognized almost immediately.

Divided into an hourly breakdown of the job, these graphs allot a specific time to each operation, beginning with the four-hour Thor coating of the ship shell, continuing through a 48-hour period for cork furring and insulation, and through an additional 12 hours for framing and pouring of the concrete sub flooring in all refrigerated rooms.

As soon as the concrete work is done, the refrigeration condensing unit is installed and the tube hanging and testing is undertaken. Simultaneously, the bulkhead manifold assembly is hung and connected to the condensing unit suction and feed lines. Following this, a 12-hour period is allotted to the installation of finished tongue and groove room linings, followed by a 12-hour Magnesite covering period.

As the sixth day's work progresses, a 24-hour schedule covers the installation, hanging and testing of coils, followed by a 24-hour period in which outside subcontractors move in to place shelves, racks and other fittings such as meat hooks, rails, etc.

Details of Testing

With coil connections already made to the manifold assembly, the job is ready to run, and just 184 hours after the first step in the construction program, the system is put into operation for its 48-hour run, followed by a four-hour shutdown temperature rise test. If the four hour period shows a temperature rise in the various rooms of no more than 6°, the job is completed, and in four hours less than 10 days another installation has been finished.

Through efficient planning of the production schedule, Benell, who for 10 years ran his own independent refrigeration service business in nearby San Francisco, has maintained a considerably smaller working force than might be expected in an operation where numerous ships are always under way at the same time.

Working crew, besides Benell, includes one leader aboard ship on the day and swing shift, but none on the graveyard, or midnight, period. In addition, three refrigeration fitters and three trainees are employed on the day shift, one fitter and three trainees on the swing shift, and two fitters and two trainees on the graveyard.

4-Point Program of 'Rationing' Calls Aids Helburn Co. to Meet Service Problems

'Grouping' of Calls Saves Time and Gasoline

MONTGOMERY, Ala.—How to handle the great volume of air conditioning and refrigeration service thrust upon it as a result of war conditions—is the problem being wrestled with by the Helburn Co., Frigidaire distributor here and dealers in general restaurant, hotel and grocery store equipment.

The problem according to W. C. and Sumpter Goodwin, veteran service managers for this concern, is how to handle about a 400% increase in business with less help than ever before. This company has sold air conditioning and refrigeration equipment including food display cases and drink boxes over a radius of 100 miles from the city. The owners of this equipment look to Helburn for service.

In addition Montgomery is a center of an immense number of war camps which also demand service as a first consideration. Most good refrigeration service men are now in the service and are next to impossible to get. Numerous service shops have gone out of business, throwing an additional load on those in business. In fact there is reportedly not a refrigeration mechanic between Mobile and Montgomery, a distance of 150 miles.

With this problem before them here in brief is how the Goodwin brothers are handling the job:

1. First they group their service calls. Gasoline and tire rationing has dictated this as well as the necessity for saving the time of mechanics.

2. Establishments which serve the most people, and that includes army camps, come first.

3. Customers are being instructed as far as possible how to make minor adjustments and take care of their own equipment.

4. The company had to quit servicing domestic boxes for the duration.

This company got only B gasoline cards for its passenger cars used by the service men, hence it is imperative to cut down mileage. This is done to some extent by grouping calls. Such a procedure makes some customers have to wait, and possibly use ice until the electric equipment can be repaired. But that is the best way out of a bad situation.

When a long distance call comes in for service, the customer is questioned as to his trouble and instructed if possible how he might fix it possibly with the aid of some handy man. Paul Renaud, engineer, stated that a hurry up call came from a good customer in a town 100 miles away, stating that all his equipment was down and that "he just had to have a service man." Mr. Renaud "prescribed" for the customer as best he could over the telephone and a couple of days later while on his way

to Pensacola stopped over in this town and saw the man. "Oh, it was just a fuse blown," said the customer. Mr. Renaud added that had a service man gone down he would have had to make a big charge just for putting in a new fuse.

One type of customer which the Helburn company makes every effort to serve is the food locker plant, some 30 of which have been built in Alabama in the past four years. With facilities of the big packers devoted almost exclusively to feeding men in the service, locker plants are now taking care of many civilian needs, in fact their facilities are strained to the breaking point.

W. C. Goodwin said growers of beef and pork products were finding it necessary to put in their own refrigeration as they can no longer be serviced by the packing houses. He remarked incidentally that he had his own locker plant in his garage, an old meat display case which he converted to that use. He said the war emergency was emphasizing the need of farmers and others for increased refrigeration equipment, so that they can better take care of their meat and poultry products, especially that retained for use.

The Helburn company has a large quantity of used equipment on hand for which it could find a ready market, but it is handicapped in reconditioning it by lack of help.

Chicago A.S.R.E. Entertains Noted Guests



Chicago Section of the American Society of Refrigerating Engineers was host to two distinguished guests at a recent meeting in the persons of Charles R. Logan of Philadelphia, national president; and Col. Crosby Field of the Safety Explosives Division of the U. S. Ordnance Department, former national president. In

this picture, left to right, are Ben Seamon, secretary of the Chicago section; Col. Field; President Logan; Harry A. Phillips, chairman, Chicago section; William S. Bodinus, who spoke on "Centrifugal Refrigeration;" Hal McPherson, officer of the Chicago section; and A. B. Stickney, national vice president of the A.S.R.E.

Jennings and Acton In New Gilmer Posts

PHILADELPHIA—Joseph C. Jennings and Richard L. Acton are the two new territorial men recently appointed to posts in Texas and Minnesota for the L. H. Gilmer Co.

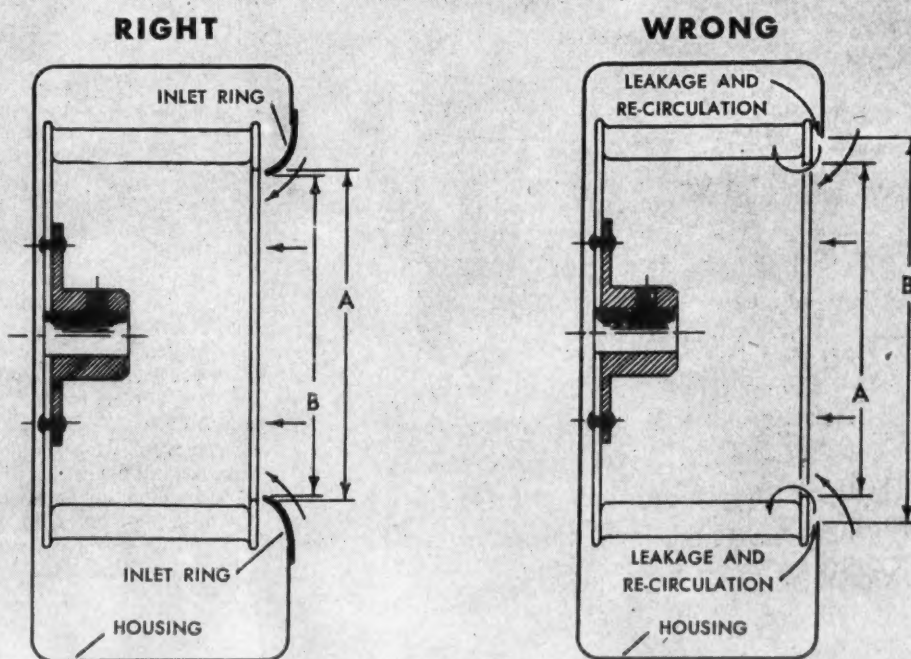
Jennings will be in charge of the Houston Gilmer branch and also technical field manager for the state

of Texas. He is a graduate mechanical engineer and for the past year has been in the industrial service department of the Gilmer factory in Philadelphia. Previously he was in charge of the mill supply division of a Gilmer products distributor.

Acton, already established as technical field manager for Minnesota with headquarters in Minneapolis, is also an engineering graduate and worked in recent years on power transmission products.

Tips for Designing Air Impelling Units

No. 2 of a series



A. DIAMETER OF BLOWER WHEEL INLET
B. DIAMETER OF HOUSING INLET

The Diameter of the Housing Inlet should not exceed the Diameter of the Blower Wheel Inlet

EXPERIENCE shows that a ratio of .95 of the housing inlet diameter to the diameter of the blower wheel inlet is best for efficient performance, except in the case of high pressure wheels, which require less air and where this ratio may therefore be less. However, in no instance should the diameter of the housing inlet exceed that of the blower wheel inlet, or loss of air pressure will result (see diagram).

The function of the housing inlet ring is to facilitate the flow of air into the blower wheel and to prevent leakage or re-circulation at this point, thereby helping to maintain the desired pressure.

Therefore, the inlet ring should never be omitted, even where installation of the wheel must be made through the housing inlet. Where the wheel is not installed through the housing inlet, the inlet ring may be formed in the side plate, but care should be taken that the ratio of .95 is maintained.

This important rule of blower design is but one of many that affect the performance of air impelling units. Manufacturers of any product requiring the movement of air are invited to consult Torrington's Research Laboratory, preferably during the early design stages. No obligation, of course.

THE TORRINGTON
MANUFACTURING COMPANY, TORRINGTON, CONN.

MANUFACTURERS OF AIRISTOCRAT QUIET PROPELLER FAN BLADES & AIROTOR BLOWER WHEELS

KEROTEST
REFRIGERATION
VALVES AND FITTINGS
Serve the Farmer
KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

"DAY & NIGHT"
A Complete line of Storage Type
Water Coolers in accordance with
Latest W. P. B. Regulations

DRINKING FOUNTAINS
NAVY-2 Models for Shipboard use ARMY-NAVY-2 Models for land use
CAFETERIA TYPE COOLERS
ARMY-NAVY 2 Models for Mess Halls
INSULATED STORAGE TANK TYPES
6 Models for Bakery Service • 3 Models for Film Processing •

DAY & NIGHT MFG. CO.
MONROVIA • CALIFORNIA
FACTORY REPRESENTATIVES
NEW YORK CHICAGO
A. C. Homeyer, 682 B'way • Marc Shantz, 565 Wash. Blvd.
ST. LOUIS DECATUR, GA.
R. H. Spangler, 3331 Market St. • J. E. Parker, 228 2nd St.

'One-Dollar' Charge on Small Appliance Service Is Profit-Making Aid

PITTSBURGH—A one-dollar "service charge" on every small appliance repaired in order to keep your repair business on a paying basis is recommended by W. E. Kossler, owner of Kossler Hardware Co., General Electric dealer here.

Before any actual repairing is done, Kossler's customers agree to pay the dollar charge even though the appliance may only be in need of a thorough inspection.

Kossler states that at the time he instituted the "service charge" he was doubtful of its acceptance but that, on trial now since December, all of his customers seem to realize the necessity of placing a higher value on small repair work and have paid the charge without question.

The Kossler repair department reaps about 80 jobs a month in small repairs and he feels sure that, except for the "service charge" of one dollar an item it would not pay him to operate any kind of a repair shop.

Kossler points out that he tells all of his customers about the dollar charge and then requests them to leave their appliances in the store for two or three days, which does away with "rush" jobs and allows more time for thorough inspection of the articles needing repairs.

Freezing Used in Processing Lend-Lease Dried Foods; Officials Try It Out

WASHINGTON, D. C.—Compressed, or dehydrated and "de-aired" foods—some of which had also undergone quick freezing—built the luncheon given recently in Washington by the Lend-Lease Administration to a group of Cabinet members, Congressmen, and representatives of United Nations in commemoration of the second anniversary of the lend-lease act.

The menu, complete from soup through pie, rolled right off the compressed food production line to impress the guests not with what can be done, but with what is being done to conserve precious space in our war-goods laden ships.

All different kinds of food are studied and special treatment applied to suit certain peculiarities so that no calorific or vitamin content is lost in the compression process. Temperatures ranging from 20° above to 20° below zero freeze some of the food while under pressure of from 250 to 2,500 pounds a square inch.

The compression process performs such fantastic feats as reducing 10 tons of raw food to one ton, of stowing enough potatoes for 100 men into a package the size of a shoe box, and squeezing hundreds of eggs into a package weighing only a few pounds.

'War Job' Need Not Be Making Guns, Bullets Declares Paul McNutt

WASHINGTON, D. C.—"A war job does not mean merely a job in aircraft or ships, ordnance, or ammunition," Paul V. McNutt, Chairman of the War Manpower Commission, pointed out recently in his comments regarding the list of non-deferable occupations and activities which he recently issued.

"People must be housed and clothed and fed in war-time as well as in peace," the manpower "czar" said. "Essential civilian activities are on an equal plane with basic war industries in our war effort. Registrants engaging in such essential civilian activities as agriculture, food processing, mining, textiles, transportation, communications, heating, power, and educational services are equally protected with respect to occupational classification and dependency status as those engaged in basic war industries."

Mr. McNutt issued his statement after a request to define the term "war jobs" which had been repeatedly used in public discussion of the new policy regarding non-deferable occupations and activities. He said that men of military age currently employed in such occupations and activities should not now leave their jobs merely because the occupation appears on the non-deferable list.

Trade Shows Really Save Travel, ODT Is Told by Chicagoans

WASHINGTON, D. C.—Seeking to head off any mandatory restriction of market and other events, trade associations and sponsors of promotional trade shows have told the Office of Defense Transportation that such an order would result in a greater strain on the present limited passenger travel facilities.

If retailers are deprived of facilities to inspect and order merchandise at a central point, is their argument, there will be larger groups of them traveling to different markets, plus manufacturers' salesmen covering their retail accounts all over the country.

They have likewise insisted that most market shows are held adjacent to supplies of the merchandise displayed minimizing transportation of goods assembled for such show purposes.

At present there is no order forbidding promotional shows and other displays, but it was said that voluntary cooperation in the elimination of many; the discontinuance of special cars to conventions, etc., had so far been satisfactory. An official of the ODT said it has various of these suggestions under consideration, but that no decision had been reached.

It was admitted that there is also under consideration the issuance of a directive to forbid certain types of promotional trade exhibitions and that this will depend on the continuance of compliance with the voluntary plan. The ODT is concerned with large merchandise displays attracting many retailers from different points.

Results of the Furniture Mart's survey among 6,000 manufacturers and retailers were reported in Chicago recently at a meeting of the Chicago Retail Furniture Assn. The speaker was President Lawrence Whiting, of the mart, who says the survey, requiring two months and undertaken at the suggestion of a government agency, shows that three to four million miles of travel are saved by markets.

Three Chicagoans have been in Washington recently visiting officials of the ODT and other government agencies including WPB and OPA with reference to the outlook for supplying furniture retailers of America most efficiently with the available supply of goods for their needs.

Frank Whiting of the American Furniture Mart, Joseph N. Stewart of Merchandising Mart and Paul Kunning, Chicago Association of Commerce, are understood to have presented results of analysis showing how markets, such as the regular summer furniture market scheduled to begin in Chicago June 21, will save rather than increase mileage.

Energy Control Co. Is Marsh 'Tri-Trol' Agent

CHICAGO—The Marsh Tritrol Co. of this city announces appointment of the Energy Control Co. of Philadelphia and New York as sales agents for the Marsh "Tri-Trol Regulator," a heating control.

The Philadelphia office of the Energy Control Co. at 3107 N. Broad St. covers the Philadelphia area, including Southeastern Pennsylvania, Southern New Jersey, and Maryland. The New York office at 205 East 42nd St. covers Connecticut and east central New York.

Boy and Girl Winners of Westinghouse Scholarship



Vice President Henry A. Wallace congratulates Ray Schiff, 18, of New Rochelle, N. Y., and Gloria Lauer, 17, Ames, Iowa, on receiving the top awards in the second nationwide Science Talent Search just concluded by Westinghouse. Both won top awards of a four-year Westinghouse Science Grand Scholarship of \$2,400.

Smaller War Plants Corp. Rubber Goods For War Now Separate Agency Produced Without Delay By Refrigeration's Aid

WASHINGTON, D. C.—The Smaller War Plants Corp. has gained complete independence of the War Production Board and has been vested with administrative powers in its efforts to direct war contracts into the little business channel, it is reported.

Actuated by Congressional complaints that the WPB was too absorbed in its own interests of big business to register concern in the problems of little business, the new set-up places SWPC strictly on its own.

WPB's alleged indifference to the needs of SWPC was made the center of an issue by members of the Senate committee on small business headed by Senator Murray of Montana who sponsored the legislation establishing SWPC as a \$150,000,000 agency.

Supposedly, it was one of WPB's duties to assist small plants and shops in securing war contracts. However, the Senate Committee said its surveys showed that SWPC received the minimum of cooperation from the War Production Board.

By order of Donald M. Nelson, chairman of the board, the entire smaller war plants division—employees, records and equipment—has been transferred to the new corporation.

Colonel Robert W. Johnson, new chairman of SWPC and also vice chairman of WPB, is credited with salvaging the smaller war plants division from obscurity. To him Nelson delegates his powers in full but retains supervisory authority and will appoint SWPC directors.

By Nelson's order, SWPC is now in position to organize and administer all the activities prescribed for it under the WPB set-up.

McCord Reports Net For 6 Months of \$229,801

NEW YORK CITY—McCord Radiator and Mfg. Co. reports a net profit of \$229,801 for six months ending Feb. 28 after contingency reserve and \$1,019,440 provision for income and excess profits taxes. For six months ending Feb. 28, 1942 net profit was \$226,155.

AKRON, Ohio—Centrifugal refrigeration machines are maintaining the manufacture of rubber life belts, pontoons, and barrage balloons at a fast and steady flow, according to experts in a plant of General Tire & Rubber Co.

Chilled water provided by the refrigeration machines is piped through insulated lines directly to the rubber milling machines. Heat generated by the friction of the rubber being squeezed through the mill rolls is so great that the rolls must be cooled by some temperature-lowering means, factory men explain.

By holding the heat in the rolls to a minimum by refrigeration, it is possible for production at the rubber company to proceed without interruption in turning out tire tread stock, cushion gum, gas mask rubber, and rubber for boats and other war necessities. Carrier equipment is used in the installation.

Worthington Pump At Buffalo Wins Its 'E'

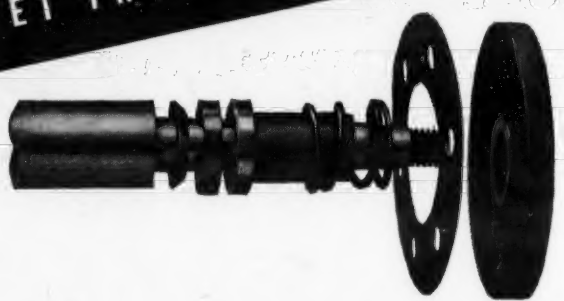
BUFFALO—Worthington Pump and Machinery Corp., was presented with the Army and Navy "E" award last month at a special ceremony attended by employees and representatives from the Army, Navy, Marine Corps and Coast Guard.

Austin C. Ross, Worthington works manager, received the "E" flag from Rear Admiral Clark H. Woodward of the Navy. Lieut. E. W. Ogram, Rochester ordnance district, distributed merit pins.

Harry C. Beaver, president of the company, said:

"Our men and those of our allies are warring with a will to win, determined to bring under control the powers of aggressor nations, and the soldiers of production behind the front must continue to war with the same will to win against delays, mistakes, slow-downs and discouragement of any form, in order that our efforts shall produce, produce, and produce more to equip adequately that other army for the hazardous tasks ahead in the front lines, on land, in the air, and on the sea."

Ask your jobber for
Chicago Seals
HE HAS THEM OR CAN
GET THEM FOR YOU!



There is no substitute for that feeling of satisfaction that is yours when you use CHICAGO SEALS for replacement on refrigerating compressor shafts. The self-adjusting sleeve-lock alone makes CHICAGO a better seal.

CHICAGO SEAL CO.
20 NORTH WACKER DRIVE
CHICAGO, ILLINOIS

Send For These
Bulletins

Bulletins MU-182 and MU-183 contain information that is necessary in the selection of the right motor for the job. They will be sent upon request.



Wagner MOTORS

ARE AVAILABLE FOR ALL OF YOUR EQUIPMENT USED IN WAR WORK!

Wagner Electric Corporation



6441 Plymouth Avenue,



Saint Louis, Mo., U.S.A.

FIELD ENGINEERING SERVICE

Wagner maintains 25 branch sales and service offices conveniently located throughout the United States. Each one of these branches is manned by trained field engineers who are ready to assist you in solving your motor application problems.



Impending Disaster

He Serves Farmers' Refrigeration Needs, But Gets No Consideration

Editor's Note: Nearly every day we receive requests from service firms asking us to write local draft boards and call attention to the fact that the War Manpower Commission has declared refrigeration servicing to be an essential activity. Presented below is one of the best of such letters, and we publish it here because it outlines the plight of refrigeration service men all over the nation with clarity, detail, and succinctness. It's necessary to reiterate what we asserted in the editorial on the front page of this issue: America is headed for a series of tragic defeats on the food front this summer if this situation is allowed to retrogress any further.

April 3, 1943

Nichols Refrigeration Service
Medina, Ohio

Editor:

It is with reluctance that I write this letter. However, if the facts contained do not merit some consideration please disregard it.

Being a subscriber to the AIR CONDITIONING & REFRIGERATION NEWS (which we could not get along without) and noticing several articles that have appeared from time to time in regard to the shortage of skilled refrigeration men in some sections of the country, I am going to try to give you a picture of our situation.

My brother, Orra Nichols, Jr., and I have operated a refrigeration service business in Medina County for the past 10 years. The first five the refrigeration business was operated in connection with a garage in Wadsworth.

However, at the end of that time the Refrigeration Department had expanded to such an extent that we were forced to discontinue the auto repairing, so we gave up the garage and moved our refrigeration business to our father's farm,

which is located three miles south of Medina on the main road.

We made this move for two reasons: first being a very low overhead and second, we were located nearer the center of our territory. This location has proven very satisfactory as our business has increased by leaps and bounds. Today we have to turn down more work than we are doing.

Last year we employed five men besides ourselves. However, today we are struggling along with two. One of our men left us to go to a war plant and the other two were drafted; and to this date we have been unable to replace them.

We happen to be the only refrigeration service organization in this section of the country outside of Akron and Cleveland. At one time we operated in 17 counties, but the lack of competent help along with restrictions on gas and tires has compelled us to make drastic reductions in the territory covered.

At present we have only one man on the road (this happens to be my brother). He takes care of commercial and industrial equipment only. We have several plants in our territory that are doing 100% war work. He services their equipment including oil coolers that we have installed to speed up production.

Also there is a considerable amount of equipment such as Slaughter Houses, Dairies, Farm Milk Coolers, Farm Frozen Food Cabinets, Meat Markets, Restaurants, Hotels, and Grocery Stores that he services. We have to turn down all Household and Non-essential Commercial Equipment as we cannot possibly take care of it.

My brother and I work night and day seven days a week except for a few hours sleep so that we can keep going. The only way that we are able to take care of household equipment is for the customer to bring it into our shop. They

come in from miles around with their refrigerators in trailers or tied on the back end of the car or most any way that you could imagine.

Due to being located in a rural district we were forced to carry a very large stock of replacement parts for which at the present time we are very thankful. In addition to making a few farm milk coolers and the service business we also have an electric motor repair department which along with running the business takes most of my time.

One of our men does nothing except build milk coolers for farmers, so that leaves the other three of us to take care of the service. This would not be impossible despite these emergency conditions except for the fact that we have a Draft Board that is not Refrigeration Minded. They carry the opinion that we used to do without refrigeration and we still can if necessary which to a certain extent is true, I suppose.

However, they do not seem to realize what effect it will have on the war effort as well as the morale of the people if there is no refrigeration service available in this vicinity. At the present time my brother is to be inducted in May and two more of us will follow very soon if we cannot show the Draft Board that our business is important to the war effort.



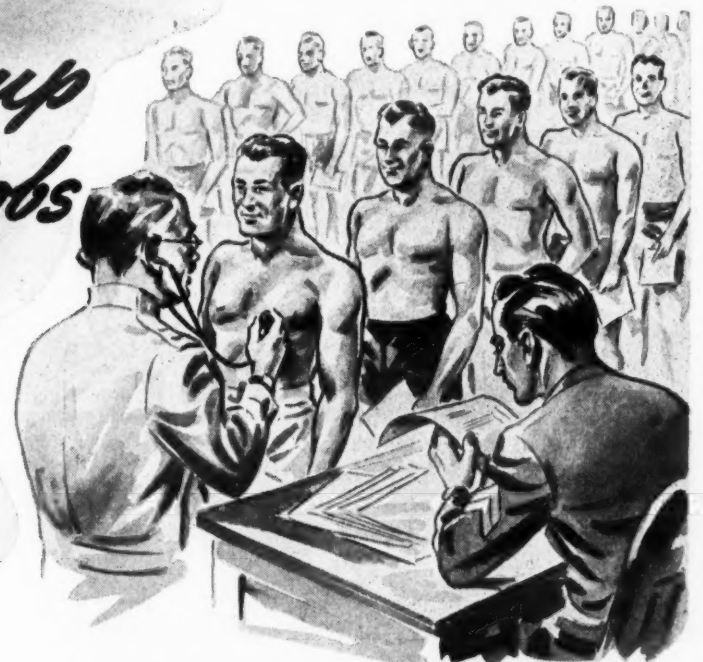
When Penn Electric Switch Co. was awarded the Army-Navy "E," employees heard from Commander James S. Laidlaw, how guns which they had made had downed five Nazi planes during an attack on a convoy. Others are Corp. W. Ned Lacey of Goshen, Ind., back after 17 months on Midway Island with the Marines; Major Joseph G. Wood; Malcolm E. Henning, vice president; Albert Penn, president, Penn Electric Switch Co.

We have used every means we know of to try to explain to them but so far we have accomplished nothing except they tell us if we can convince them our business is essential they will be willing to reconsider—so we are appealing to you for help. If it is not against the principles of the organization we would greatly appreciate you forwarding any information to them you have accumulated that might influence them in changing their decision.

We are not asking for this help for personal reasons as we are very willing to go into the service if we are needed there more than on the home front. However, it seems to us that our Draft Board doesn't realize the importance of the refrigeration industry as a whole and with our being located out on a farm, they have no conception of the amount of essential service we take care of.

ART NICHOLS,
General Manager

*They've given up
their regular jobs*
FOR THE
DURATION



Going into the service of Uncle Sam postpones the peacetime application of Amcoil Test Chambers for testing high and low temperature conditions. They have been

found indispensable by manufacturers of wartime precision instruments, communications and electronic equipment, batteries, motors and allied products — and are designed and built for this field exclusively.

But, by serving exclusively one master now, Amcoil Engineers have mastered many tough temperature and humidity problems. The solutions can be put to effective use later in helping you solve your peacetime temperature and humidity testing needs.

So . . . when Amcoil Engineers can quit their wartime work and return to their regular jobs, you can avail yourself of Amcoil proven experience, technique and equipment for atmospheric control.

Right now the advice of Amcoil Engineers is available for a discussion of your current temperature, pressure and humidity developments and how future Amcoil Testing Chambers can serve you.



AMERICAN COILS CO.

25-27 LEXINGTON STREET • NEWARK, N. J.

MIDWEST flies the "E"



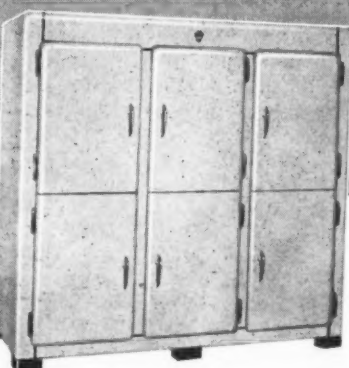
**THIS COMPLETE
'REACH-IN' LINE
MEETS EVERY NEED!**

In war or peace, Midwest serves . . . fulfills every demand of the times. Today, as always, Midwest Cabinets are distinguished by sound, sturdy construction and outstanding value.



Model 160 (above) popular, practical 16 cu. ft. model—smallest of the complete Midwest 'Reach-in' line.

Model 700 (right) is the largest standard Midwest 'Reach-in'. 71.5 cu. ft. capacity. There is also a complete range of sizes and equipment between 16 and 71.5 cu. ft.



Midwest

MFG. COMPANY
Galesburg, Ill., U.S.A.

Export Division, Merchandise Mart, Chicago, Ill.

The Priorities Quiz

(AIR CONDITIONING & REFRIGERATION NEWS, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

L-38 With Respect To Old Parts Disposal

Q. Under L-38 as revised, to what extent is the dealer responsible with respect to the return or disposal of old parts being replaced with new parts sold by the dealer?

A. This answer must be considered as a matter of opinion due to the fact that no official interpretation has been issued on this point. However, L-38 clearly says:

"No dealer shall deliver any part made of metal to the owner of the system to be repaired unless the owner agrees that he will deliver the old part to the dealer as directed to do so and if not, that he will dispose of the old part to a scrap dealer within 30 days after installation."

It is clear that the dealer should be able to substantiate from his

records that the purchaser of the new part clearly understood that the old or worn out parts to be replaced should be disposed of according to the wording of the order. It is suggested, therefore, that at the time of sale the dealer have the purchaser sign a "rubber stamped" statement on the order to the effect that the old or worn out parts replaced will be properly disposed of in accordance with L-38. Such a statement might read as follows:

"The undersigned purchaser agrees that he will, within 30 days after the installation of repair and replacement parts delivered on this order, either return the old parts being replaced thereby to the seller or dispose of them to a scrap dealer as required by WPB Order L-38."

Whatever a dealer decides to do with respect to compliance with this section of the order he should be sure that he could satisfy a WPB

inspector from some evidence in his files that he has made a reasonable attempt to live up to the requirement of this section. Compliance with this section of L-38 is obviously beneficial to the dealer. The proper handling of replaced parts is really an assurance of his being able to secure a replacement inventory for, in accordance with L-38, these old valves may be sent to a producer who may repair them for replacement in the dealer's inventory.

Ratings For Replacing Inventories Under L-38

Q. I understand that the revised Order L-38 prohibits the delivery of parts for repair unless the order bears a rating of AA-4 or is specially authorized. We are dealers and have filled from our inventory, orders bearing A-10 and A-8 ratings. In order to replace our inventory, we can only pass along to our supplier the ratings we received on the orders for the parts we sold. Does this order prevent the producer from filling orders with these ratings to replace our inventory?

A. No. L-38 reads as follows on this point:

"No dealer or producer shall deliver any new or used parts to the owner, lessee, or user of any used system," and the order then proceeds to recite the AA-4 and other authorized order restrictions.

You will observe that the only sales which are so restricted by this section of L-38 are sales by a producer to an "owner, lessee, or user" or by a dealer to an "owner, lessee, or user" and that no attempt is made to impose by this section a restriction on deliveries from producers to dealers or dealers to other dealers.

L-38 as such, therefore, does not prevent the transaction mentioned in your question. It should be remembered, however, that because of the great quantities of higher ratings now being received by producers that it will be increasingly difficult for any supplier to fill orders rated outside of the "AA" class.

Kerotest Adds Star To It's 'M' Pennant

PITTSBURGH—The United States Maritime Commission, "in recognition of continued outstanding achievement," has added a gold star to the "M" pennant already won by Kerotest Mfg. Co., Pittsburgh.

The original "M" award to Kerotest was made last August. Notice of the additional star was made last week in a telegram from H. L. Vickery, vice chairman of the U. S. Maritime Commission, to E. G. Mueller, Kerotest president.

CORRECTION: The Right Names For the Right Faces

One of those things that happen about 10 years or so in a publication—happened in the March 15 issue of AIR CONDITIONING & REFRIGERATION NEWS when the wrong identifying lines were printed under a picture of a group of men.

While the "outline" identified the group as "men representing the various sections of the appliance field in Cleveland studying plans for a 'layaway' plan, the picture was that of the executive sales personnel and district managers of the Electric Re-

frigeration and Air Conditioning division of Servel, Inc. Anent this, E. A. Terhune, sales manager, wrote:

"IT JUST AIN'T SO
"My name is not David Frankel and so help me I was not involved in the 'Debate on a Layaway Sales Plan for Cleveland."

"It looks as if you are going to have to use some more ink and print another picture on page 21 of the March 15 issue with the information that this was the meeting of our district managers."



Representatives of the Electric Refrigeration and Air Conditioning division of Servel, Inc., at the plant in Evansville, Ind., for discussions on the war effort and post-war planning. From left to right, seated: W. J. Aulsebrook, Evansville; A. J. Schmitz, Albany, N. Y.; E. A. Terhune (who presided) Evansville; H. F. Bell, Boston; and C. L. Olin, Evansville. Standing, left to right: P. B. Reed, Evansville; F. H. Mead, Beloit, Wis.; William Wyatt, Toronto; J. K. Lutz, Columbus; O. B. Lance, Evansville; E. J. Miller, Evansville; C. P. Martin, Evansville; W. F. Cissell, Dallas; and G. S. Eager, Evansville.



This group of men representing various sections of the appliance field in Cleveland, is studying plans for a "layaway" or deferred purchase plan of appliance selling, with delivery postponed to the postwar period. Front row, left to right: Walter Bon Durant, C. C. Conrad, David Frankel, A. F. Head, J. E. North, William G. Rose, L. G. Miller. Back row, left to right: A. C. Scott, John Walker, H. H. Kennedy, Randall Miller, Ralph Wilson, John J. Bohning, and William Howlett.



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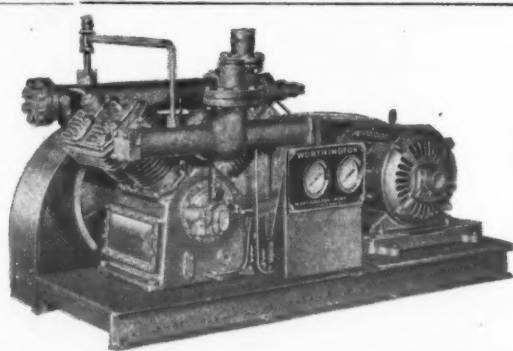


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REFRIGERATION COMPRESSOR
FEATURES:

- ★ Worthington Feather* Valves, for quiet operation
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- ★ Timken Roller Main Bearings (in the larger sizes)
- ★ Full Force-Feed Lubrication (on larger, heavy-duty units)

Furnished with water-cooled condenser, or for shower condenser application

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... a Limited Number of WORTHINGTON FREON REFRIGERATION UNITS

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SIZES: In a range from 3 H.P. to 50 H.P. Suitable for Air Conditioning, Cold Storage or Low Temperature Freezer Duty

Standard WORTHINGTON Self-Contained Units of advanced design, and high-rating efficiencies. Available complete with motors and automatic control equipment. Write for prices giving conditions of service, capacity requirements and motor characteristics.

WORTHINGTON



AIR CONDITIONING AND REFRIGERATION DIVISION

WORTHINGTON PUMP AND MACHINERY CORPORATION • HARRISON, NEW JERSEY

PD-25A Certificates Good For Certain Types of Firms

WASHINGTON, D. C.—By an amendment of Priorities Regulation No. 11A, Production Requirements Plan units which do not process the materials listed in Regulation No. 11, but purchase only fabricated items or materials other than those listed, may now apply, during the calendar quarter beginning today, the ratings they were authorized to use by their first quarter PD-25A and PD-25F certificates to the same quantities of fabricated items and unlisted materials.

Previously, Regulation No. 11A limited use of first-quarter ratings by a PRP unit during the second quarter to the amount of unlisted materials and of fabricated items needed to balance the listed materials it was authorized to receive. Thus, until today's change, assembly plants and other companies which previously operated as PRP units, but did not require listed materials in their output, had no general procedure for obtaining the needed production materials during the second quarter of 1943.

Maytag Reports '42 Net

NEW YORK CITY—Maytag Co., manufacturer of electric washers, reports net earnings of \$703,459 in 1942. In 1941 net earnings amounted to \$1,625,646. The net sales figure for 1942 is given as \$9,688,195, against \$16,242,653 for 1941.

Omission From 'Essential Hard Goods' List Does Not Affect Refrigeration

(Concluded from Page 1, Column 4)

frequency measurements, including duced, but which will be carefully examined in order to see whether any production can be resumed. They are: enamel tea kettles, enamel cabinets, blued steel drip pans, ice picks, fireplace screens, non-automatic electric iron, gasoline cans for tractors, and spring scales.

Joseph L. Weiner, director of the Office of Civilian Supply, issued a statement which said:

"The current status of this study is being made public so that everyone may know what is going on in this field. However, the fact that such a study is being made should not be interpreted as meaning that a lot of civilian items are going to be brought back into production, or that production of others is to be suddenly increased.

"However, adequate production of essential items for civilians is an integral part of the war effort. We can't fight a total war without such items as axes, hoes, tacks, sauce pans, lanterns, lamp bulbs, and milking pails. I am greatly indebted to the committee for the splendid and painstaking task it has performed in the national interest."

The special committee consisted of executives particularly qualified in the hardware field and in the distributive channels through which "hard goods" move to the home owner. The committee included Cal Sivright, president, Oliver Farm Equipment Co., Chicago, chairman; C. J. Whipple, president, Hibbard, Spencer & Bartlett, Chicago; T. V. Houser, vice president, Sears, Roe-

buck & Co., Chicago; and Irwin D. Wolf, vice president, Kaufmann Department Stores, Pittsburgh, Pa.

The committee will continue to act in an advisory capacity to the Office of Civilian Supply in studying the quantities and types of items that may be needed, and on any other problems that may arise in the "hard goods" field.

In preparing the "hard goods" list the committee was asked not to concern itself with restrictions already imposed on the manufacture of the items but to be guided solely by the relative essentiality of all items in the "hard goods" field. As it turned out, all but a few of the items on the committee's list are still in production, although many of them are under various degrees of limitation.

The War Production Board urged business men not to flood the board with inquiries about the study. The announcement as made represents the whole situation as it stands now, and a large floor of inquiries on questions which cannot be answered will hamper the work of the board.

Following is the list of items which the committee considered essential for home and farm use. Except for the eight items previously listed, none of these has been prohibited. The production of some of them may be satisfactory; the production of others may be found to be too low. Continuing studies are being made to determine the facts.

Axes, hammers, wedges, wrecking bars, picks, hand and power saws, files and rasps, bits and braces, screw drivers, punches, chisels, pliers, pliers and nippers, wrenches, vises, tongs, forges, grinders and grindstones.

Shovels, spades and scoops, scrapers, garden and farm forks, rakes, hoes, hand

cultivators and plows, hay hauling equipment, rivets, steel washers, tacks, glazier's points, nails, brads, and staples.

Wire, barbed, etc., poultry netting, rope, hay, chains and accessories, belt lacing, wheelbarrow wheels, horseshoes, nails and calks, clevises, harness and wagon hardware, lock sets and repairs, locks and keys.

Butts, springs and latches, buttons for screens and doors, pulleys, casters, hasps and hinges, screw and gate hooks and eyes, shade rollers and accessories.

Scythes and snatches, knives, corn and hay, pruners and trimmers, lawn mowers, repair parts, lawn and garden hoses and accessories, sprayers, pumps and accessories, hand corn huskers, chicken brooders, chicken watering fountains, bull rings, hog scrapers.

Solder, wood screws, shields for lag screws and bolts, bolts, carriage, machine, lag, toggle, stove, and plow; automatic steam valves, flue and boiler brushes, coils, hot water for furnaces.

Pumps and repairs for hot water heating systems, coal heating boilers and repairs, midge cast iron radiators, pneumatic pressure tanks, water systems and repairs, water pumps accessories and repairs, well points.

Enamel covered kettles, enamel double boilers, enamel coffee percolators, enamel dish pans, enamel wash basins, enamel sauce pans, enamel water pails, enamel roasters, flour sifters, cream separators and repairs, milk cans and can covers, milk strainers and replacement parts.

Cast iron skillets and dutch ovens, sealers for home canning, jar caps, tin cans for canning, can openers, basting spoons, ladles, cake turners, kitchen forks, tea and bowl strainers, mincing knives, egg beaters, wire cloth, hardware cloth.

Toilet seats and hinges, bathroom closets, cabinet showers, bathroom and plumbing equipment repair parts, bathtub fittings, faucets, wastes, etc., lavatory, sink, laundry tray faucets and repair parts, lavatory traps and trap sets, sink strainers, basin and bathtub plugs, plumbing gaskets and washers, range boilers supplies and repairs.

Coal and wood water heater replacements and repair parts, steel and soil pipe, fittings for iron pipe, check and glove valves and repairs, radiator, safety and relief valves and repairs.

Washboards, lanterns, kerosene lamps, shades and replacement parts, wicks for oil and gasoline stoves and heaters, washing machine repair parts, coal and wood ranges and heaters, and repair parts, gas ranges and repairs, coal and wood furnace, pipe and repairs, stove and furnace pipe elbows, stove and furnace dampers, stove shovels.

Pocket knives, household shears and scissors, razor blades, repair parts for clipping and shearing machines, butcher knives, hoof knives, table knives and forks, brooder thermometer, vacuum bottles and lunch kits, alarm clocks.

Repair parts for electric irons, cotton covered lamp cord, porcelain electric insulators, switches, receptacle, sockets, and plugs, friction and rubber tape, plugs for appliances, push buttons, cord sets for appliances, dry cell batteries, flashlight cases and bulbs.

Churns, food and meat choppers and repairs, mop stick, nursing bottle brushes, cream separator brushes, galvanized pails, tubs and ash cans, garbage pails, funnels for tractors, tractor and machine oilers.

Wash boilers, non-electric irons and iron handles, clothes wringers, irrigation pumps, automobile fuses, automobile and truck rim wrenches, incandescent lamps, fluorescent lamps and fittings.

Automobile and truck chains and repairs, automobile tube and tire repair kits and patches, gasket cement, automobile and bicycle pumps, automobile and bicycle valves, cores and caps, storage batteries, gas engine, spark plug wrenches, automobile and truck jacks.

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

might be (the crowd got a great bang out of the variety of salutes). But after coming under Col. McCarty's spell, each blitzed off the platform with chin up and fire in his eyes. It was almost a "before and after" effect.

If that was any sample, our lads are in fine hands.

Bank for the Future

This school, which will train hundreds and possibly thousands of refrigeration maintenance men for the Army, is going to give this industry after the war a backlog of men trained to make a refrigeration system run under any sort of conditions.

To help this "do-the-impossible" training along, Anderson and Hendrickson have assembled the darndest collection of refrigeration museum pieces, one-hoss shays, and tube-benders' nightmares ever seen under one roof. These have been scrambled, amalgamated, contrasted, and hooked up with almost every modern type of refrigeration system you can think of off-hand.

The boys are encouraged to fit the jigsaw pieces together in unorthodox fashion; and those instructors probably never had more fun in their lives.

War Timetable

If Germans are cleaned out of Tunisia by first of June, Eisenhower will be ahead of schedule. He may make it. That being the case, Italy will catch hailcolumbia during the summer, instead of autumn.

Germans are said to have stockpiles of war materiel sufficient to last them at least 10 months, even if the terrific air bombardment they are now undergoing disrupts all war production.

But . . . can they take it?

If Italy is smashed by early autumn, Germany could then be invaded from many points, if she hasn't been already, and winter would see the Axis in a sorry plight.

Sub Menace

Big stumbling block remains Admiral Doenitz and his big supersubmarines. Authorities tell us that by

September counter measures should put the clamp on Doenitz, but it will be tough going until then.

Those "counter measures" include some very interesting developments, plus adequate numbers of the new big subchasers now coming off the ways.

Everything points toward big victories next autumn, if we keep turning out the weapons of war at the present clip, and IF the Germans have no surprise weapons up their sleeves.

Smith & Mitchell, Take Bows!

This publication has been quick to criticize poorly-thought-out orders and such emanating from the various government agencies, so we should be just as ready to praise good work when it comes.

That's why we hope the entire industry will join with us in congratulating the two men who now head up our industry's activities in the War Production Board: Sterling Smith, chief of the commercial refrigeration and air conditioning section of the General Industrial Equipment Branch; and Fred Mitchell, chief of the household refrigeration section, Consumers Durable Goods Branch.

Both have been doing great work in recent weeks. They are on top of their respective jobs, know what the score is, and have been laboring incessantly to make sense out of chaos.

Hats off! We hope they'll be with us a long time!

This War's Different

The Washington representative of an essential war industry heard via the grapevine the other morning that there was to be a meeting that afternoon of certain members of his industry with W.P.B., O.P.A., Army and Navy officials.

So he called the Government official in charge of the meeting to verify the time and place.

"Oh, but this meeting is by invitation only," said the official, huffily.

"The hell you say! I didn't know this was an invitational war," retorted the industry representative. "I'll be there!"

He was, too.

OIL SEPARATORS

For Refrigerating and Air Conditioning Systems



SIZES—1 TON TO 100 TONS
1 to 12 Tons 35 to 100 Tons
entirely enclosed removable base

DESIGNED FOR INSTALLATION
BETWEEN THE COMPRESSOR
AND THE CONDENSER

• Ask for Catalog No. 15 •

Years in use attest their efficiency

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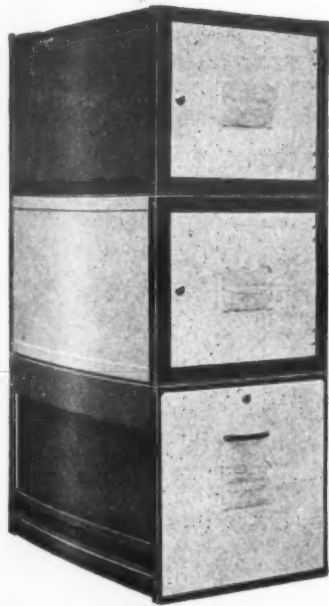


This Hoarding Approved

You, as an operator, must help relieve and augment the canned fruit and vegetable situation. Every inch of available space you have must be crammed full during the growing season from Victory Gardens and other sources.

It's up to you to make your community as "food self-sufficient" as possible and NOW is the time to prepare for it by installing in that available space the modern

MASTER FOOD CONSERVATOR



Built to last—not a substitute. Matches your present drawers and door fronts. Gives you more for your money—satisfies patrons.

**Don't Wait
Order NOW**

Prompt shipment. Write, phone or wire your requirements. Equip for the future as well as the present. Do it today.

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through distributors of
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Over 300,000 Master Food Conservators in Use



**DOUBLE BARRELED
WAR POWER!**

Underwood & Underwood

• These days, BAKER'S full manufacturing facilities are engaged in a double-barreled program to speed the war effort. BAKER skilled craftsmen are building refrigeration equipment for essential war uses AND applying their traditional precision workmanship to

producing parts used in planes, tanks, guns and ships.

If deliveries are slow, please understand that the sole reason is that the war effort must come first.

BAKER Ice Machine Co., Inc., Omaha, Neb.

BAKER

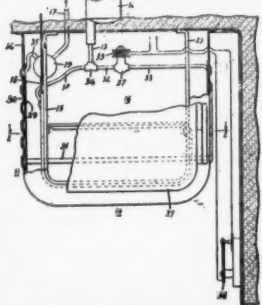
COMMERCIAL & INDUSTRIAL
REFRIGERATION EQUIPMENT

• BUY WAR BONDS AND STAMPS •

PATENTS

(Concluded from April 5 Issue)

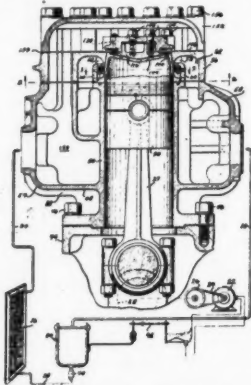
2,312,861. REFRIGERATING MACHINE. Leonard W. Atchison, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application July 1, 1941, Serial No. 400,588. 5 Claims. (Cl. 62-116).



1. In a refrigerating machine including a cabinet having a food storage compartment to be cooled and a refrigerant circulating system comprising a cooling unit arranged within said food compartment and refrigerant flow-controlling means for controlling the flow of liquid refrigerant to said unit, said cooling unit comprising two evaporators connected in parallel relationship in said system and arranged one within the other, means for supplying refrigerant to said inner one of

said evaporators, said inner one of said evaporators being of the flooded type and having a header and a plurality of depending refrigerant circulating conduits, means for supplying refrigerant to the outer one of said evaporators, said outer one of said evaporators being of the dry type, flow controlling means arranged in said last mentioned supply means for controlling the flow of refrigerant to said outer evaporator, temperature responsive means for controlling said flow controlling means, and means for withdrawing the gaseous refrigerant from said evaporators.

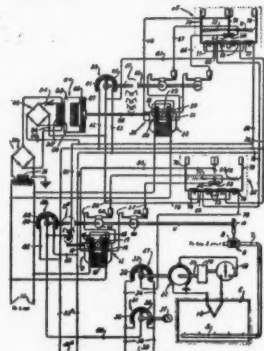
2,312,883. REFRIGERATING APPARATUS. Clemens B. Demann, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 23, 1939, Serial No. 291,573. 6 Claims. (Cl. 230-231).



1. A reciprocating compressor including a cylinder and a piston, said cylinder including a separate lower wall-forming portion, a separate upper wall-forming portion, and a cylinder head constituting a part separate from but connected to the upper wall-forming portion, and a valve assembly held between said upper portion and said lower portion.

Patents for weeks of March 9 and 16

2,313,079. CONDITION CONTROL. Edgar D. Lillja, Rockford, Ill., assignor to Barber-Colman Co., Rockford, Ill., a corporation of Illinois. Application June 23,

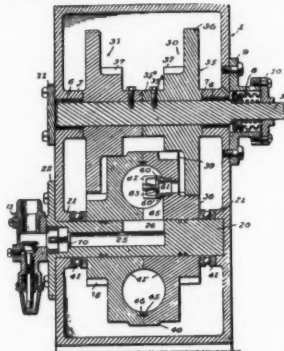


1940, Serial No. 342,954. 20 Claims. (Cl. 236-78).

17. A control system having, in combination, a reversible electric motor operator

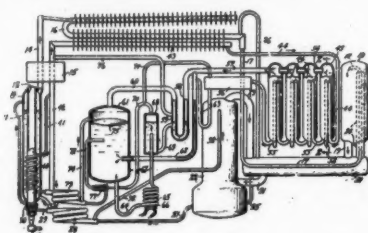
having a driven member, means for detecting deviations of a controlled condition from a desired value, mechanism controlled by said means and controlling said operator to actuate said member first with a primary movement proportional and in a direction corresponding to the condition deviations and then with a slower secondary resetting movement, said mechanism including a second operator driven by reversible electric motor driving means adapted when energized to exert a constant torque for causing said secondary movement, and automatically controlled means operating to vary the speed of said driving means while maintaining said motor torque constant.

2,313,214. REFRIGERATOR COMPRESSOR. Leonhardt W. Benz, Mobile, Ala. Application April 5, 1940, Serial No. 328,117. 9 Claims. (Cl. 230-144).



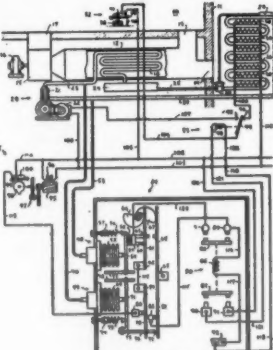
1. In a rotary pump, a pair of identical relatively movable cylinder members formed and arranged completely to provide an annular cylinder chamber; a piston fixed to each movable member and operatively disposed within said cylinder chamber; means for synchronously rotating the cylinder members in the same direction at different angular speeds during one part of a revolution, at an inverse ratio of speeds still in the same direction during another part of the revolution, and at the same speed in the same direction for the balance of the revolution; and inlet and outlet means arranged to admit fluid to the cylinder chamber and to exhaust fluid inwardly therefrom in a radial direction after it has been acted upon by the pistons.

2,313,250. REFRIGERATION. Erik Sigfrid Lyngner, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Nov. 15, 1939, Serial No. 304,507. 15 Claims. (Cl. 62-118).



5. An intermittent absorption refrigerating system including an absorber, an evaporator, a conduit connecting the vapor space of said evaporator and said absorber below the liquid level therein, a conduit connecting the vapor space of said evaporator and the vapor space of said absorber, the last mentioned conduit being arranged to have a trap, and means for introducing liquid into and withdrawing liquid from said last mentioned conduit to seal and unseal said trap.

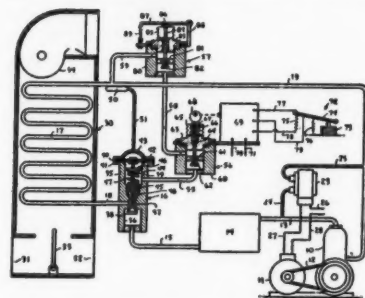
2,313,390. REVERSE CYCLE HEATING SYSTEM. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Aug. 14, 1939, Serial No. 289,933. 13 Claims. (Cl. 62-4).



1. In a reverse cycle heating system for a space having an evaporator for absorbing heat, a condenser for dissipating heat for heating the space and a mechanism for controlling the circulation of refrigerant through the condenser and evaporator, the combination of, control means for normally controlling the mechanism to maintain desired temperature conditions in the space, means for periodically in-

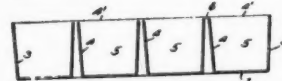
terrupting at regular timed intervals the control of the mechanism by the control means for defrosting the evaporator, and means for returning the control of the mechanism to the control means as soon as the evaporator has been defrosted.

2,313,391. REFRIGERATING SYSTEM. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Sept. 25, 1940, Serial No. 358,781. 12 Claims. (Cl. 62-8).



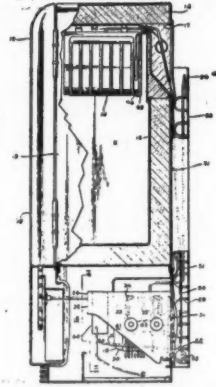
1. In a refrigerating system, in combination, an evaporator of a type having a pressure drop between its inlet and outlet, an expansion valve of the superheat control type having a pressure responsive element, means connecting said element and a portion of said evaporator wherein the pressure is lower than at the inlet so as to subject said element to said lower pressure, valve means in said connecting means, and an element responsive to evaporator pressure for maintaining said valve open for all normal evaporator pressures but closing said valve when indicating that the cooling load is excessive so that the pressure responsive element of said expansion valve is less subject to said lower pressure as said valve means closes off the connecting means.

2,313,394. ICE CUBE TRAY. George C. Norris, Swissvale, Pa. Application Feb. 28, 1941, Serial No. 381,111. 1 Claim. (Cl. 62-108.5).



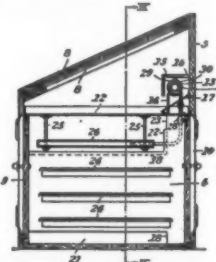
An ice cube tray including laterally spaced plates having deep transverse corrugations providing walls of separate rows of spaced cells, the ends of the plates being extended upwardly to form end walls of the tray, there being openings in the top portions of the corrugations, a channeled plate interposed between and connecting the corrugated plates to form the inner sides of the rows of cells, there being slots in the sides of the channeled plate opening beneath the apertured top portions of the corrugations, and continuous side plates secured to and extending along the outer sides of the corrugated plates to form the outer walls of the cells and to close the outer ends of the spaces between the cells.

2,313,472. REFRIGERATION APPARATUS. Gustaf A. Halfvarson, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application May 7, 1941, Serial No. 392,195. 7 Claims. (Cl. 62-1).



1. In a mechanical refrigerator, the combination of a cabinet, an insulated compartment therein, a machine compartment below the insulated compartment, a plate condenser secured to the rear wall of said cabinet and extending downwardly to the machine compartment, a refrigerant compressing unit in the machine compartment, a bracket attached to the plate condenser and projecting into the machine compartment, and tension springs coacting between said bracket and said refrigerant compressing unit and resiliently supporting said refrigerant compressing unit and resiliently supporting said refrigerant compressing unit from said bracket.

2,313,510. REFRIGERATED CABINET. Harry A. Borts, Pittsburgh, Pa. Application Nov. 23, 1940, Serial No. 366,871. 4 Claims. (Cl. 62-89.5).



1. A refrigerated cabinet having an upper display compartment and a lower storage compartment, a horizontally extending pan dividing the cabinet into the two compartments and capable of holding ice on which articles may be displayed in the display compartment, a cooling coil in the display compartment, a heat insulating baffle extending horizontally below the ice pan for a portion of the length of the cabinet and thence downwardly towards the bottom of the cabinet to divide the storage compartment into two chambers, and a cooling unit positioned between the ice pan and the baffle and extending into one of the chambers.

(Concluded on Page 35, Column 1)

CLASSIFIED ADVERTISING

RATES for all other classifications, 10¢ per word, minimum charge, \$5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, \$12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

POSITIONS WANTED

SERVICE MAN, supervisor, have handled men, fifteen years' experience, commercial refrigeration and air conditioning service and installation. Desire connection with national manufacturer. Will travel. Box 1443. Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

ICE CREAM cabinets, frozen food cabinets or cabinets only without units, any type or condition. State age, dimensions, price and type of system in communication. We need domestic and commercial units or any quantity of useable refrigeration parts. Give full details. FEDERAL APPLIANCE SERVICE, 1250 Riverbed, Cleveland, Ohio. Cherry 8170.

WANTED: Used Commercial Refrigeration and Air Conditioning. Also new or used stokers. THE BIMEI CO., 305 Walnut St., Cincinnati, Ohio.

WANT DRY beverage coolers, 1/4 to 3 H.P. condensing units, ice cream and frosted food cabinets, forced convection coils, valves, etc. From distributors or dealers. Have buyer in East now. Airmail or wire UNITED COMMERCIAL SALES CO., 925 South Grand Ave., Los Angeles, Calif.

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COMPLETE high side Frigidaire, 1/2 to 1/4 H.P., air cooled, less motor, \$15.00. 1/2 to 1/4 H.P. air cooled condensers, \$6.00. 1/2 to 1/4 H.P. 2 cylinder Frigidaire compressor, \$7.00. All used in good condition. F.O.B. EDISON COOLING CORP., 310 E. 149th St., New York City.

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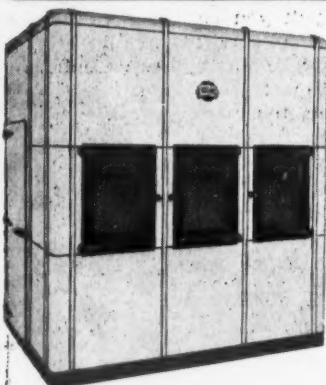


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Patents (Cont.)

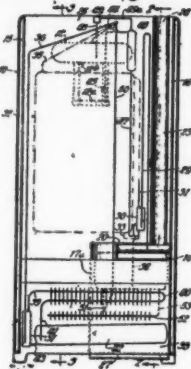
(Concluded from Page 34, Column 5)

2,313,671. REFRIGERATOR CONSTRUCTION. Theodore W. Rundell, Abington, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Dec. 27, 1940, Serial No. 371,945. 9 Claims. (Cl. 220-9).



1. A refrigerator cabinet construction comprising an outer shell and lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell and lining having edge portions bent inwardly toward each other and spaced apart peripherally of the front opening, the edge portion of the lining having apertures therein and the edge portion of the shell being bent to form an inwardly facing groove substantially peripherally of said front opening, a removable breaker strip closing the space between the shell and lining and having its outer edge extending into said inwardly facing groove of said shell, fasteners having head and shank portions for removable securing the inner edge of the breaker strip to the edge portion of the lining by engagement of the shank portion of said fasteners through apertures in said lining edge portion, the rear face of said breaker strip being recessed to receive the heads of said fasteners, and means for securing said fasteners to the breaker strip comprising a U-section spring channel having a portion formed to receive the breaker strip inner edge and a leg portion underlying the rear surface of the breaker strip and provided with apertures therein, the heads of the fasteners being disposed in said recess between said breaker strip and the leg portion of the spring channel and the shanks of said fasteners extending through said apertures so that said spring channel and said fasteners are interlocked with the breaker strip and the latter is supported by the fasteners.

2,313,707. ABSORPTION REFRIGERATOR. John Lithgow and Leslie K. Jack-



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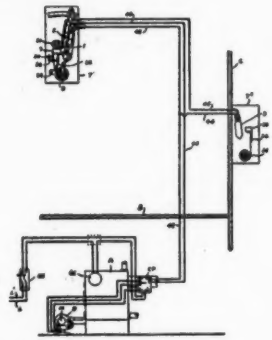
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son, Cleveland, Ohio, assignors to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York. Application Aug. 15, 1939, Serial No. 290,314. 22 Claims. (Cl. 62-118).

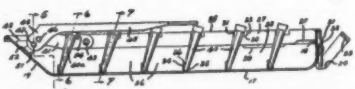
20. In a refrigerator of the intermittent absorption type including a cabinet provided with a refrigeration space in the forward upper portion thereof, an evaporator in the refrigeration space, a still-absorber, an air cooled dehydrator, and an air cooled condenser operatively connected to said evaporator, a flue in said cabinet extending substantially from top to bottom thereof, said flue being open at the top and bottom for a circulation of air therethrough and having a widened portion positioned at least in part below said refrigeration space, and a relatively long narrow portion positioned to the rear of said space, said widened portion housing said condenser, said dehydrator having a relatively narrow cross section and being housed in the narrow portion of said flue and substantially conforming in width to the width of said flue so that air passing through the condenser and dehydrator will flow through the dehydrator and the flow of said air will be induced by the heat given off by the dehydrator, and a second independent flue having an inlet and outlet housing said still-absorber.

2,313,835. TEMPERATURE CONTROL SYSTEM. Ira E. McCabe, Chicago, Ill. Original application Aug. 3, 1938, Serial No. 223,865. Divided and this application Jan. 6, 1941, Serial No. 373,263. 7 Claims. (Cl. 236-91).



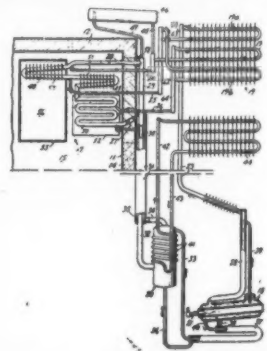
1. In a system for controlling the operation of an electrically operated and controlled heating plant for a building to anticipate changes in the operation of the heating plant required by changes in temperature exterior of said building to maintain a desired temperature within the building including a room thermostat having a thermal responsive means responsive to changes in ambient temperature for automatically operating a switch in the control circuit, a second switch in said room thermostat actuated by said thermal responsive means to close in advance of and to open subsequent to the normal closing and opening of the first switch, and a third switch having a thermal responsive means responsive to changes in temperature exterior of the building automatically operating to open said switch upon an initial rise and close said switch upon an initial drop in exterior temperature, said second and third switches connected in series with each other and in parallel with the first switch in the control circuit, said first switch normally controlling the heating plant, said second switch upon the closing of the third switch controlling the heating plant in advance of the normal control of the plant by said first switch, whereby upon a decline in exterior temperature the effect thereof upon the interior is anticipated by controlling the heating plant in advance of its normally controlled operation by said first switch, said normal control by the first switch being effective upon the opening of the third switch upon an initial rise in exterior temperature.

2,313,932. REFRIGERATING APPARATUS. Frank W. Gerard, Oakwood, and Francis I. Batalczak and Sylvester M. Schweller, Dayton, Ohio, assignors to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application June 27, 1941, Serial No. 400,064. 8 Claims. (Cl. 62-108.5).



7. A grid for an ice tray comprising, a longitudinal member and a plurality of substantially inflexible transverse molded plastic partitions separate from and carried by said member for movement relative thereto, means for applying force to said partitions to cause said relative movement thereof, and means cooperating with said force applying means to distribute the force over a substantial area of one of said transverse partitions.

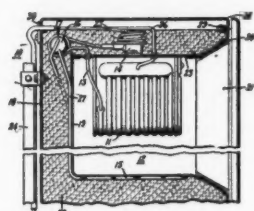
2,314,064. REFRIGERATION. Carl T. Ashby, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Nov. 15, 1939, Serial No. 304,638. 5 Claims. (Cl. 62-119.5).



4. A refrigerator having a storage compartment, a high humidity compartment in heat exchange relation with said storage compartment, refrigeration apparatus comprising a plurality of parts and connections therebetween, said parts including a liquid refrigerant supplier and a plurality of cooling elements in which liquid refrigerant evaporates to produce a cooling effect, each of said compartments being arranged to be cooled by one of said cooling elements, said connections including conduits for conducting liquid from said liquid refrigerant supplier to said

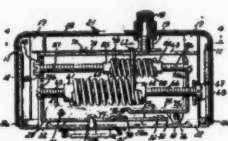
cooling elements, and said parts including said connections being so constructed and arranged that said cooling element for said high humidity compartment is capable of producing a cooling effect by evaporation of liquid refrigerant therein only when the load is at or above a predetermined value.

2,314,190. REFRIGERATING APPARATUS. Leonard W. Atchison, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application Feb. 21, 1941, Serial No. 379,933. 6 Claims. (Cl. 62-115).



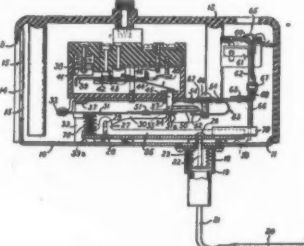
1. Refrigerating apparatus comprising a primary and a secondary refrigerant system, means for transferring heat between said systems, said means comprising a condensing portion in said secondary system and a portion of said primary system in heat exchange relationship therewith, said portions being formed of relatively good heat conducting material, one of said portions being in the form of a spiral coil the turns of which are free to move relative to each other, said coil being removably disposed in intimate thermal engagement with the other of said portions.

2,314,210. CONDITION RESPONSIVE CONTROL. George M. Hausler, Ballston Lake, N. Y., assignor to General Electric Co., a corporation of New York. Application Sept. 26, 1941, Serial No. 412,415. 13 Claims. (Cl. 200-33).



1. A condition responsive control having in combination, a base plate with an opening formed therein, condition responsive means mounted on one side of said plate and having an operating member extending through said opening, a channel frame mounted in the opposite side of said plate to straddle said member and having an opening in one side thereof, an L-shaped main operating lever pivotally mounted within and adjacent one end of said channel frame with one arm thereof engaging said operating member to be operated thereby and having a finger extending laterally through said side opening in said channel frame, a reversed L-shaped differential control lever pivotally mounted within and adjacent the opposite end of said channel frame with one arm disposed in the path of the side one arm of said main lever, a pair of calibrating springs reversely mounted within said channel frame in substantially parallel spaced apart alignment between the other arms of said L-shaped levers and each having one end thereof connected to a corresponding one of said other arms and a tension adjusting element connected to the opposite end thereof, a calibrating scale element movably mounted on said channel frame and secured to and movable with the said tension adjusting element of said main lever calibrating spring, a stationary pointer mounted on said frame and cooperating with said movable scale member to indicate the calibration of said main lever calibrating spring, a second indicating pointer secured to and movable with the said tension adjusting member of said differential lever calibrating spring for independently indicating the joint calibration thereof on said scale and a circuit controlling switch unit mounted on said base in off set side-by-side alignment with said channel frame and in operating relation with said laterally extending finger of said main operating lever.

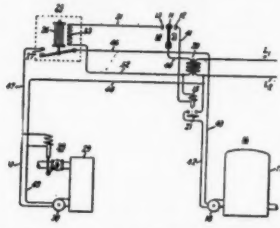
2,314,211. CONDITION RESPONSIVE CONTROL. George M. Hausler, Ballston Lake, N. Y., assignor to General Electric Co., a corporation of New York. Application Nov. 27, 1941, Serial No. 420,652. 16 Claims. (Cl. 200-140).



1. In combination, a control member movable between two control positions, opposing biasing means therefor having a reversible predominance, a main operating lever having lost motion pivotal connecting means adjacent one end thereof, an adjustable fulcrum for engaging the other end of said main lever, condition responsive means having an operating member engaging said main lever between the ends thereof, an amplifying lever overlapping the said one end of said main lever and interconnected with said lost motion pivotal connecting means, means for rotatably supporting one end of said amplifying lever, a compression spring interposed between said amplifying lever and the said one end of said main lever to take up the lost motion in said pivotal connecting means and bias said levers to rotate in opposite directions about said pivotal connecting means and thereby provide both a yielding and a biasing operating connection therebetween, a differential control lever hinged adjacent the other end of said amplifying lever to be moved as a unit therewith to render one of said biasing means predominant over the other to bias said control member to move from one of said positions to the other and to be moved relatively to said amplifying lever to render the other of said biasing means predominant over said one biasing means to bias said control

member to return from said other position to said one position, and an adjustable stop disposed in the path of said differential control lever to regulate the said relative movement thereof.

2,314,232. AIR CONDITIONING CONTROL SYSTEM AND APPARATUS. David W. McLennan, Caldwell, N. J., assignor to General Electric Co., a corporation of New York. Application July 1, 1942, Serial No. 449,254. 3 Claims. (Cl. 236-44).



3. In a room air conditioning system, in combination, a thermostat responsive to variations in the room air temperature from a desired value, automatic humidifying control means including a humidostat responsive to variations in the room air relative humidity, an electric local air heater for increasing the temperature of the air immediately adjacent said humidostat above the temperature of the surrounding room air to regulate the response of said humidostat, and means controlled by said thermostat for energizing said heater only during the time the room air temperature is above said value.

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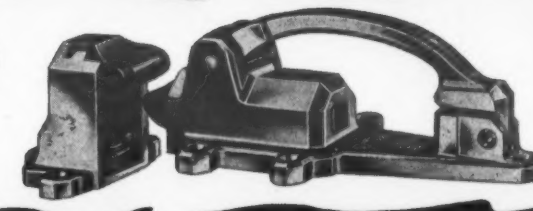
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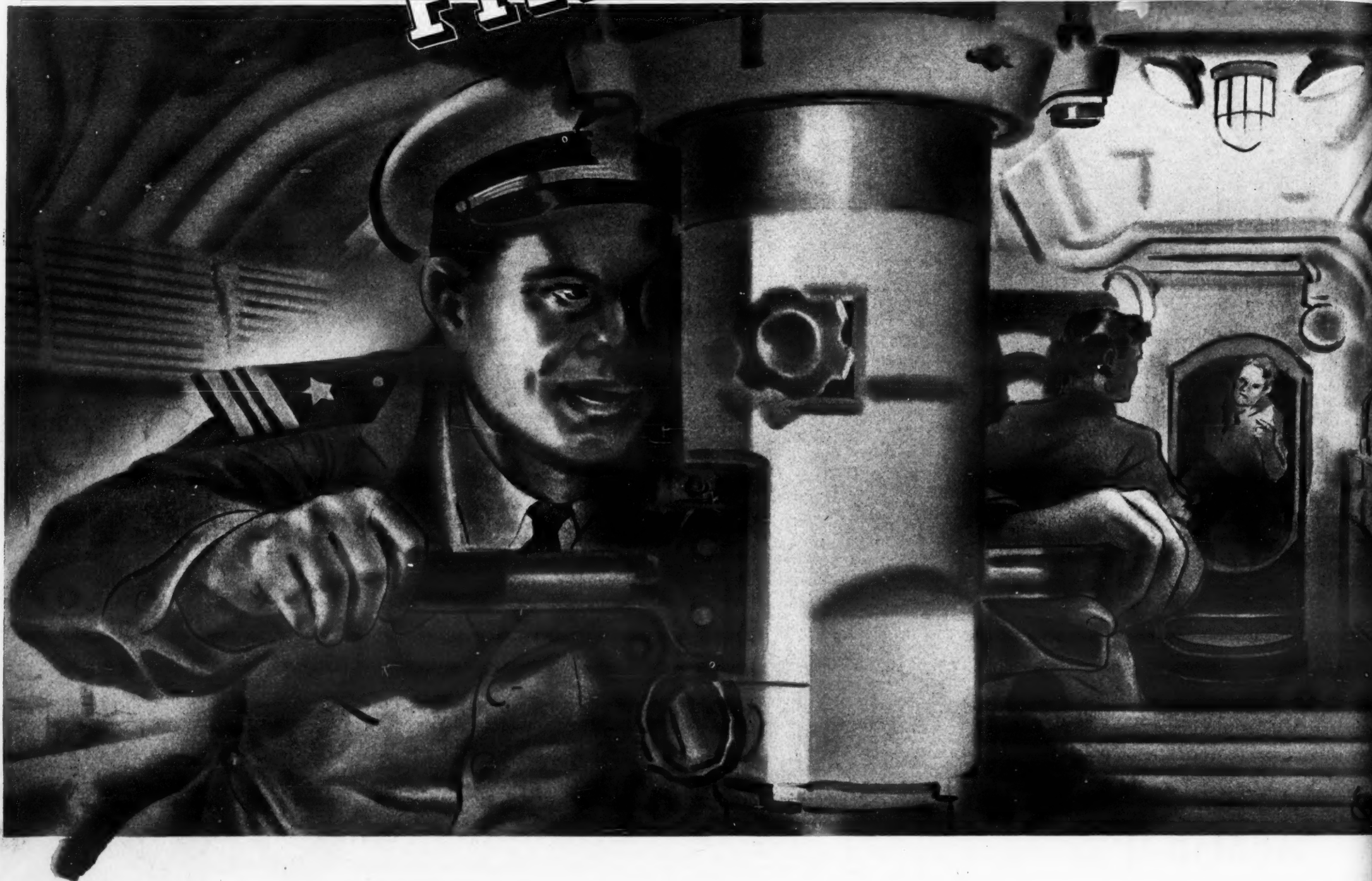
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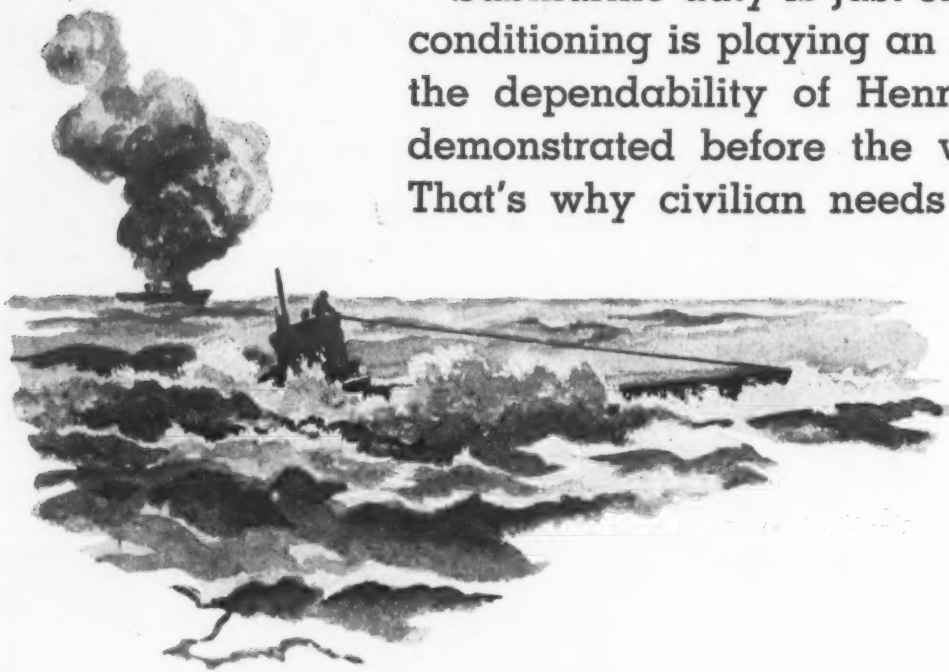
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